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Detroit hospital exposed babies to radiation in '54

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DETROIT—Harper Hospital in Detroit was one of five U.S. hospitals in which newborn babies were exposed to radioactive iodine in 1954. The U.S. Energy Department is trying to find at least 235 people who were exposed to iodine 131, including 70 at Harper. The government experiment was meant to detect a thyroid condition that could cause mental retardation, although the isotope proved an unreliable means of testing. Researchers who conducted the study apparently didn't monitor the patients for subsequent health problems. But Harper spokeswoman Leigh Sullivan said Friday that the dosages were low and probably not harmful.

Radiation test victims should be compensated, O'Leary says

Los Angeles Times

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WASHINGTON — The U.S. government should compensate victims of radiation testing conducted as part of its Cold War nuclear program, Energy Secretary Hazel R. O'Leary said yesterday as disclosures mounted about extensive experiments involving humans as often-unwitting subjects.

"We ought to go forward and explain to the Congress what has happened and let the Congress of the United States and the American public determine what would be appropriate compensation," Ms. O'Leary said in an interview on Cable News Network.

Ms. O'Leary's comments marked the first time the federal government has indicated that it is willing to acknowledge liability for possible harm done by hundreds of government-funded tests conducted from the late 1940s into the 1970s. Government compensation for test victims across the country could total hundreds of

millions of dollars and could end in costly lawsuits brought by several citizen groups.

Ms. O'Leary said that up to 800 people were subjected to the experiments and exposed to potentially harmful amounts of radiation, some apparently without their informed consent.

Under Ms. O'Leary, the department has vowed to "come clean" on the secrets of nuclear testing. Her department and an independent task force it has named are conducting investigations of dozens and possibly hundreds of government-sponsored experiments in which humans were subjected to radiation.

The Energy Department established a toll-free phone line late last week for individuals to call if they believe they have been subjects in a test involving radiation.

Since last Friday, the department has received roughly 100 calls per day.

In recent months, reports on radiation testing have cited experiments

gested, and I tend to agree personally, that those people who were wronged need to be compensated."

A report yesterday said that a top radiation biologist warned in 1950 that the research had "a little of the Buchenwald touch," a reference to a Nazi concentration camp where medical experiments were carried out on inmates.

Dr. Joseph Hamilton, who worked for the U.S. Atomic Energy Commission, made the analogy to Buchenwald in a memo outlining his concerns about experiments designed to gauge levels of radiation that would injure soldiers.

According to the *New York Times*, which quoted from Dr. Hamilton's memo in yesterday's editions, Dr. Hamilton warned that officials "would be subject to considerable criticism" for conducting experiments that exposed people to potentially harmful doses of radiation.

If Congress approves compensation for subjects of radiation experiments, the payments would likely ease the legal barriers for many who have sought reparations from the U.S. government. Courts have frequently turned away suits in such cases.

At the same time, however, a decision to compensate for radiation experiments could limit strictly the amounts the victims could receive.

One expert suggested such a decision also could give momentum to hundreds of claims that have been filed by workers at U.S. nuclear production plants, many of whom allege they have been exposed to unsafe levels of radiation.

"If we're going to engage in a debate over what to do with [unwitting victims of] dangerous radiation, we should include in their numbers those who were exposed on the front lines of the Cold War: the nuclear production workers, who were no less exposed," said Paul DeMarco, a Cincinnati attorney who has handled several class-action suits against the government on behalf of nuclear workers.

"Many have suggested, and I tend to agree personally, that those people who were wronged need to be compensated."

HAZEL R. O'LEARY
Energy secretary

that included conducting nuclear tests over populated areas and injecting patients, including newborn babies, with plutonium and radioactive iodine.

Asked yesterday if the disclosures leave the government vulnerable to lawsuits, Ms. O'Leary said: "My view is that we must proceed with disclosing these facts and information regardless of the fact of whether it opens the door for a lawsuit against the government. Many have sug-

To Test or Not to Test

Prostate: Doctors wrangle over the benefits of screening and early treatment

TOM WIRTH KNOWS THAT PROSTATE cancer can kill. It killed his father at 73. So when the Massachusetts landscape architect turned 51 last year, he went to his doctor to get a blood test called PSA, which can provide an early warning. When Wirth scored a 5—a reading just slightly on the high side—the doctor suggested repeating the test a few months later. The second test yielded a more troubling 8.4, and a needle biopsy confirmed the bad omen: his prostate harbored cancerous cells. What to do? Wirth asked five doctors, and he got five conflicting assessments. "Each expert feels that his option is the panacea," he says. His first impulse was to have the gland removed, but his thinking changed after he reviewed the scant scientific data for himself. Having studied the pros and cons of surgery and radiotherapy, he settled on acupuncture.

Thanks to a boom in diagnostic tests, thousands of American men are now discovering prostate tumors that would once have gone unnoticed. Cancer screening is supposed to save lives, by helping doctors destroy tumors before they invade the rest of the body. But no one is sure whether that rule applies to prostate cancer. The disease can kill, yet when left alone it usually doesn't. And because the standard treat-

ments have never been tested in controlled trials, no one knows how much good they do. Surgeons swear by surgery. Radiation oncologists swear by radiation. Some doctors prefer doing nothing at all unless the cancer starts to spread. And patients are caught in the middle. "Nobody has good evidence," says Dr. John Wasson, the director of Dartmouth's Center for the Aging. "It's a mess."

Design flaw: At the center of the mess is a puny gland that sits at the base of the bladder, forming a ring around the urethra. Though quiet and dutiful in young men, the prostate grows notoriously cranky with age. By the time they're 65, three out of four men suffer from a noncancerous prostatic swelling that disrupts urination, and most of those who live long enough develop some cancer as well. Autopsy studies reveal cancerous prostate cells in 30 to 40 percent of men over 50 and in half of those who survive into their 80s. Yet only 3 percent of American men die of the disease. PSA tests can help spot a silent tumor, but they can't determine its potential.

Until recently the primary tool for detecting prostate cancer was a rubber glove. By placing a gloved finger in a man's rectum and pressing forward, a doctor can discern lumps in the gland, and a needle biopsy can determine whether they're cancerous. Un-

fortunately, most of the cancers that doctors detected this way had already spread beyond the prostate. The trend toward earlier detection started in the 1970s, as technologies such as ultrasound came into wide use. But the real boom began in the late '80s, when a company called Hybritech started marketing the blood test for PSA (prostate-specific antigen), a protein produced exclusively by prostate cells.

A high PSA reading doesn't always signal cancer, and some tumors produce no rise in PSA. But because a cancerous prostate tends to release that protein into the blood, the test offers a good rough indicator of tumor activity.

RADICAL PROSTATECTOMY

The most common prostate-cancer treatment, radical surgery involves general anesthesia, a deep abdominal incision and at least three days in the hospital.

FREEZING IT OUT

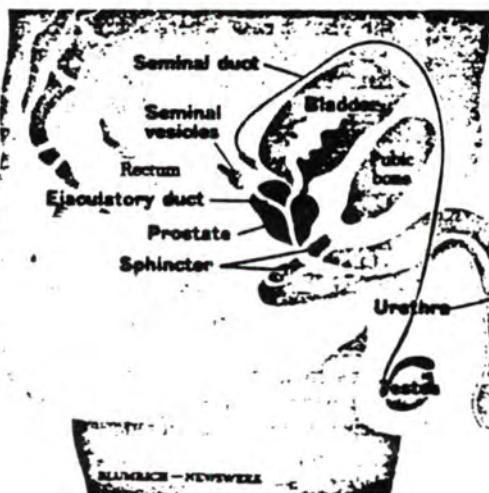
Some doctors now use a device called a cryoprobe to fire supercooled nitrogen into the prostate. The procedure causes no bleeding and requires just one night in the hospital.

RADIOACTIVE RICE

One alternative to removing a cancerous prostate is to seed it with radioactive pellets. Like surgery, the new procedure leaves some men impotent. But it's cheaper and less invasive.

A Fragile Gland

The disease-prone prostate (red) sits at the base of the bladder, excreting a nourishing lubricant into sperm as it travels from the testes.



In 1986 the government approved PSA testing as a way to track patients' responses to treatment. And shortly after the test hit the market, the manufacturer and the American Cancer Society began promoting it as a universal screening tool for men over 50. The National Cancer Institute resisted the

idea, since no one had demonstrated that the practice would save lives, but doctors and patients readily embraced it.

The screening craze has had dramatic effects already. Though there's no evidence that prostate cancer is actually on the rise, the rate of new diagnoses has increased by 85 percent since 1973 and is jumping by as much as 16 percent annually. Treatment rates have risen even more dramatically. In a study published last spring, researchers at Dartmouth Medical School tracked the rate of radical prostatectomy (complete removal of the prostate) among Medicare patients and documented an increase of nearly 600 percent from 1984 to 1990. In 1990 alone,

doctors performed 16,000 operations on Medicare recipients—more than in 1984, 1985 and 1986 combined—and the trend has yet to peak. Healthcare experts calculate that if all of the nation's 20 million or so eligible men got PSA tests, some 400,000 would become candidates for surgery and the bill would exceed \$10 billion.

Common sense? Doctors differ vehemently on whether these trends are all for the good. To enthusiasts the benefits of early, aggressive treatment are obvious. "The old paradigm is based on common sense," says Dr. William Catalona, director of urological surgery at Washington University in St. Louis and a leading prostate surgeon. "We know that little cancers become big cancers, and big cancers can spread and kill you." But skeptics maintain that common-sense impressions are no substitute for scientific evidence when so many lives and dollars are at stake. Recent studies have helped bolster that position. In the Medicare study, for example, the Dartmouth researchers found that men in Alaska were 20 times as likely as men in Rhode Island to undergo prostate surgery—but no less likely to die of the disease. The usual way to resolve such a puzzle is to conduct a single study in which some patients get a particular therapy and some don't. Since the standard prostate-cancer treatments have never been tested that way, members of the Dartmouth team concocted a surrogate experiment.

For this study they pooled data from the medical literature and compared the benefits of aggressive treatment with those of "watchful waiting." After adjusting for the fact that prostatectomy has traditionally left 85 percent of the recipients impotent and 27 percent at least partially incontinent, the researchers surmised that aggressive treatment could add three or four years to the life of a 65- to 69-year-old patient with a fast-growing tumor. But for men over 70—who receive roughly half of all prostate-cancer treatment—the benefits were negligible and the risks high. Analysis showed that 8 percent of the surgical patients over 75 had suffered serious complications, such as heart failure, and 2 percent had died of them. The researchers not-

**35,000 men
will die from
prostate
cancer
in 1993**
**46,000
women
will die from
breast
cancer this
year**

playing the complications that can follow watchful waiting—which include castration and death—and for failing to consider recent improvements in surgical technique. Thanks to the nerve-sparing procedures Walsh has pioneered, many surgeons now boast far lower complication rates than past studies have shown, and less invasive treatments are now in the works. When 35,000 men are dying of prostate cancer each year, says Catalona, stopping to subject time-honored treatments to controlled clinical trials would be obscene. "This new crowd, what they say is unless you can absolutely prove that this treatment is going to save lives and be cost-effective, you shouldn't do it."

Actually, no one proposes shutting down the nation's surgical suites. But critics worry that until controlled trials are conducted, most men will be stuck relying on their doctors' wildly varied biases. According to a 1988 study, nearly 80 percent of U.S. urologists (but only 4 percent of those in Britain) would favor radical prostatectomy for a man in his 60s with a tumor confined to the gland. The same study found that 92 percent of radiation oncologists would shun surgery—and recommend radiation. Until a consensus is on the horizon, members of both specialties would do well to remind their patients that there is no definitive treatment for prostate cancer—and that their own informed choices are as valid as a doctor's.

Geoffrey Cowley with
Karen Springen in Chicago,
Debra Rosenberg in Boston
and Joshua Cooper Ramo
in New York

**In 1994,
the NIH
will spend
\$51 million
on prostate
cancer
research**
**By contrast,
the NIH
will spend
\$299 million
for research
on breast
cancer**

15 roentgen or more became sterile temporarily. There is no evidence that any of them developed cancer as a result of the experiment. But none of the Washington prisoners has been tracked since the early 1970s; the inmates themselves didn't want continued medical scrutiny. In Oregon, where no follow-up tests were done either, some of the prisoners filed suit in 1976 demanding medical treatment. Eventually the Oregon state Legislature intervened, granting continued treatment to nine of the men and awarding them a cash payment. The nine men split a total of \$2,215.

Hot shots: Last month The Albuquerque Tribune published a series naming five of 18 hospital patients who were given "tracer" injections of plutonium in a government-sponsored study between 1945 and 1947. Many of the patients were expected to die soon, but some cases didn't work out that way. Elmer Allen, an impoverished 36-year-old railroad porter from Texas, got a shot of plutonium in his injured leg. Three days later the leg was amputated above the knee and taken away by researchers. Allen didn't die for another 44 years, but long life was no blessing to him. His daughter, Elmerine Whitfield, said he had seizures and was severely depressed. He drank too much. "I believe my father was aware something had been done to him," said Whitfield. But she insisted he never gave informed consent to the experiment. "I know he didn't understand plutonium," she said.

Scientists who worked in the dawn of the nuclear age defend the validity of the plutonium tests. "We should be extremely cautious about criticizing their work," says John Simpson, a retired astrophysicist who worked on health and safety issues as a group leader on the Manhattan Project, which developed the first atomic bomb. If research had not been done on humans, he says, "radioactive dangers would be greater throughout the world today."

Biophysicist Newell Stannard, an authority on the history of radiological research, says the plutonium tests were launched because several Manhattan Project workers in Los Alamos, N.M., had been exposed to the material. No one knew for sure how much damage the plutonium would do to them, or how quickly and thoroughly it would be expelled from their bodies. "There had been a lot of work with animals that showed rates of fecal and urine excretion of the plutonium, how much went to bone marrow and so on," says Stannard. "But there was this big question: will it be the same in

man? The Manhattan Project said we've got to do experiments in terminal patients and see if the results are the same as in animals."

Stannard says that 11 of the 18 tests were done in Rochester, N.Y., by a respected internist, Dr. Sam Bassett; the others were scattered around the country. Were the patients fully informed? "I simply don't know," says Stannard. "I do know that Sam

Bassett was a very straightforward, honest guy. I'm sure he told the patients he was going to do something." But plutonium research was a top-secret subject in those days. "I have a feeling Bassett told people they were taking something for the war effort," says Stannard.

Many other tests conducted on humans were benign and were performed quite casually, without a lot of red tape. "The level of acceptable informed consent has changed," says Dr. Merrill Eisenbud, professor emeritus of environmental medicine at New York University Medical Center. He describes some of his own research. "Open-air [nuclear] weapons testing left iodine in the milk worldwide," he says. "One of my experiments was to

determine the significance in terms of the dose absorbed by a child's thyroid. We used to get the children to come over from a pediatric clinic with their moms. We'd explain what we were doing, sit each

**A 1949 TEST
RELEASED
100 TIMES
THE
RADIATION
EMITTED AT
THREE MILE
ISLAND**

Where's the Plutonium?

The government recently revealed that it stores 33.5 metric tons of plutonium in six states.



child down and—using a scintillometer that didn't even touch him—measure radiation in the thyroid. We'd give the child a lollipop and that was the end of that. Today you'd have to fill out so much paperwork that it would discourage people from participating in the test."

In the 1940s and '50s, many doctors weren't in the habit of explaining things to their patients. "Doctors weren't questioned," says Dr. Andrew Davis of Chicago, a frequent writer on radiation-health issues. "When you combine that with radiation technology born of secrecy in the name of military security, it becomes easier to understand—if not condone—these experiments and accidents. Dr. Kildare could do no wrong."

Death spray: In reality, of course, some researchers did numerous wrongs, as they are now defined. According to the GAO report, radiation was deliberately released into the atmosphere in at least a dozen secret tests in New Mexico, Tennessee and Utah between 1945 and 1952. The tests were part of an effort to develop a radiological weapon—or to defend against one, if the Soviets developed a death spray. At about the same time, the Hanford Nuclear Facility in Richland, Wash., was regularly showering its neighbors with radioactivity. A secret internal memo uncovered in 1986 described the infamous Green Run experiment, in which plant managers deliberately released a huge cloud of radioactive iodine-131 to see how far downwind it could be traced. The cloud floated over Spokane and drifted all the way to the California-Oregon border, carrying hundreds (or perhaps thousands) of times more radiation than that emitted by the 1979 Three Mile Island accident in Pennsylvania.

Now that nuclear testing has ended, at least in the United States, the government is left with a vast, pulsating landscape of atomic waste dumps to clean up. The people who developed nuclear reactors and weapons were no more prescient about future environmental hazards than they were about health risks. The storage of spent fuel and other nuclear materials was shockingly sloppy. "Every time you turn over a new document, there's a \$5 billion problem," says Dan Reicher, a special assistant to O'Leary.

The DOE's nuclear-weapons complex, spread over 4,000 square miles in 18 states, appears to be particularly hazardous. Steven Blush, a DOE safety official who was forced out of his job last spring, wrote a lurid report charging that the bomb factories averaged three accidents a day in 1991 and '92. Most of the mishaps were minor, but a few of them posed potentially major health threats to factory workers and nearby residents. Blush charged.

One of the most conspicuous problem

A HUMAN HORROR STORY

Plutonium: What doctors didn't tell Eda Charlton

EDA SCHULTZ Charlton was alone and sick when she visited the University of Rochester's Strong Memorial Hospital in the fall of 1945. A protein deficiency had swollen her ankles and covered her body in a serious rash. Doctors also suspected a mild case of hepatitis. The 48-year-old seamstress was newly widowed—her husband had died suddenly a year earlier. Her only son was in the service. Physicians put her on a high-protein, low-salt diet.

They also made Charlton an unwitting subject in a grotesque government-sponsored medical experiment. On Nov. 27, 1945, according to records unearthed by The Albuquerque Tribune, doctors at Strong working for the Manhattan Project injected her with plutonium-239 to study how quickly the body rids itself of the radioactive substance. (The hospital never sanctioned the experiments.) Between 1945 and 1947, she and most of the 17 other patients in the secret program—11 of them in Rochester—received dosages of about .3 microcurie. That is about 43 times what is now regarded as the safe lifetime limit. Charlton wouldn't learn of her official poisoning for another 30 years.

Family members say they suspected she was monitored during her routine checkups over the years at Strong. The visits often turned into stays lasting several days—even when it was clear she wasn't all that ill. "They used to keep her in a section that was like a hotel," says her son, Fred Schultz. Once his mother said that doctors placed her in a sealed room to check her body for radiation. Efforts to glean



any information were always rebuffed. In the early 1970s, the family quizzed one doctor who'd treated Charlton since 1950. "When I asked her about plutonium, she'd say, 'I don't know a thing about it,'" recalled her daughter-in-law, Helen Schultz.

Hospital officials say they informed Charlton and other living victims of the experiment on behalf of the Atomic Energy Commission in 1974. The Schultzes say they learned about it from a doctor at Strong five years later. Doctors claim Charlton suffered no health problems from the radiation. She died of a heart attack in 1983. But Fred Schultz, now 73, re-

mains bitter. "I was over there fighting the Germans who were conducting these horrible medical experiments," he said. "At the same time my own country was conducting them on my mother."

SUSAN MILLER

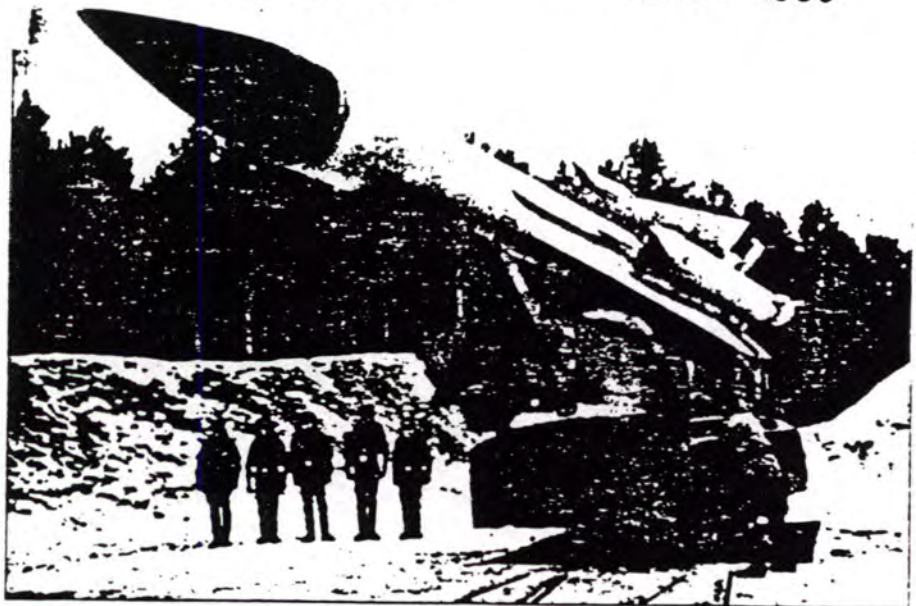
plants is the DOE's weapons facility at Rocky Flats, outside Denver. Starting in 1989, a federal grand jury collected evidence about alleged violations of environmental law there. Early last year the grand jury tried to indict DOE officials and executives of Rockwell International, a former operator of the plant, accusing them of participating in "an ongoing criminal enterprise" by ignoring environmental laws.

The local U.S. attorney declined to prosecute, and instead announced a plea bargain with Rockwell, which agreed to pay a fine of \$18.5 million—slightly less than the annual performance bonus it received for successful stewardship of the plant. The grand jurors continued to press their case, and when the story leaked to Westword, they found themselves under investigation for violation of secrecy laws. Now the grand jurors are hoping to testify before Congress. "It's doubtful that you could find a bigger environmental criminal than the Department of Energy," charges their lawyer, Jonathan Turley, an expert on environmental law at George Washington University. "It hasn't changed with the new administration," he maintains.

Morning after: O'Leary would dispute that. The secretary bucked her own bureaucracy by insisting that the DOE release a report on deteriorating storage sites for spent nuclear fuel. Aides warned that disclosure could cause liability problems. O'Leary insisted, "I want this done," she said. But there's a lot more to do. "It's as though you had a party every night for 45 years, and you never cleaned it up," says Thomas Grumbly, DOE assistant secretary for environmental restoration and waste management.

Grumbly is a worrier. He predicts that the figures currently quoted for the total cost of the cleanup—from \$200 billion to \$300 billion—may not even be close. "It could be a couple of times larger than that," he says. He frets about the notorious storage tanks at Hanford, where so many different wastes have been dumped that no one knows exactly what kind of witches' brew is in them. "Every time the phone rings after 10 o'clock at night, I think, 'This is it, we've had an event,'" says Grumbly. Like his boss, he thinks the time has come for "throwing open the blinds" to shed some light on the nuclear-waste crisis. The government's complete disregard of the by-products of its cold-war nuclear obsession has left us with "the single largest environmental and health risk in the nation," he says. It may also be the last of America's nuclear secrets—and perhaps the most dangerous of them all.

RUSSELL WATSON with DANIEL GLICK and MARK HOSENBALL in Washington.
JOHN MCCORMICK in Chicago. ANDREW MURR in Los Angeles. SHARON BEGLEY and SUSAN MILLER in New York. GINNY CARROLL in Houston and SHERRY KEENE-OSBORN in Denver



"We cannot deal with this evil": A Ukrainian nuclear missile site

THE DOOMSDAY CLOCK TICKS ON

Proliferation: The world hasn't turned out to be a safer place after all

SAY "CHERNOBYL," and you summon up memories of the 1986 disaster at a Ukraine nuclear power plant that spurred Mikhail Gorbachev to press ahead with political reform. But in the post-cold-war world to which Chernobyl was a midwife, the plant has a scary new significance. In October, two fuel rods containing uranium were discovered missing from the partially operating facility. They have not been recovered.

The theft at Chernobyl reveals a bitter irony. With the end of the superpower conflict, it is easy to think that the world has become a safer place—after years of inching toward midnight, the famous "doomsday" clock of the Bulletin of Atomic Scientists has been turned back. Yet the very source of this new safety—the collapse of Soviet power—has



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25 NATIONS
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OR
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also nourished new dangers.

Nuclear-weapons technology is 50 years old, dating from a time when computers were clunky and slow, when micro-engineering was in its infancy. The world's good fortune in avoiding nuclear conflict since 1945 was in large measure due not to any technical difficulties but to the control that America and the Soviet Union exercised over materials and skilled personnel.

The Soviet half of that control is now wasting away. "In the old days," says Leonard Spector, a nuclear-proliferation expert with the Carnegie Endowment for International Peace, "it took 10 years from the time a country wanted a bomb to when they could actually get a bomb. Now countries

may be able to suddenly jump ahead." The growing concern over nuclear-weapons proliferation takes a variety of forms. Among countries already known

to have had programs underway, the news is not all bad. Though Israel, India and Pakistan are undeclared nuclear states, South Africa, Argentina and Brazil have halted their programs. Kazakhstan and Belarus, which became independent with Soviet weapons on their soil, have signed the Non-proliferation Treaty and are shipping weapons to Russia.

The key problem among the known nuclear states is Ukraine, which, with about 1,800 warheads, is notionally the world's third most powerful nuclear state. The government of Leonid Kravchuk has promised to ratify nuclear-weapons treaties and dismantle its warheads. But nationalists see the weapons both as a protection against Russia—a concern heightened by the Russian elections—and as a bargaining chip for cash from the West. "We should be in no hurry to get rid of the missiles," says Ihor Derkach of the Parliament's defense committee. Last week there was some good news. In meetings in Moscow and Kiev, Vice President Al Gore and American Ambassador at Large Strobe Talbott found Ukraine more receptive to solving the proliferation problems, though much will depend on the internal political struggle between Parliament and president.

'Rogue states': There is even greater proliferation anxiety about the programs in "rogue states" such as Iraq, Iran and North Korea—even Algeria, which has a Chinese-supplied research reactor and a "hot cell" to help produce plutonium. A combination of allied bombing during the gulf war and United Nations inspection after the war destroyed most of Iraq's nuclear-weapons capability. But the CIA thinks that some parts of the program remain hidden—and that if U.N. sanctions were lifted, Saddam Hussein's program would be humming again.

He may be beaten to the punch by Iran. Though the CIA thinks that Teheran is still perhaps a decade away from building its own bomb, it could hasten the process by buying materials and skills from Moscow and Beijing. Iranians are scouring Central Asian republics for nuclear components. And NEWSWEEK has learned that the CIA keeps a close eye on Iranian students at Western schools who are vacuuming nuclear technology.

North Korea, in a standoff with the West over its refusal to allow inspection of the suspect research center at Yongbyon, may have enough plutonium stockpiled to make two to five bombs. So far Pyongyang appears to be unable to fabricate a bomb small enough to fit onto its new



Nourishing new dangers: A Chernobyl survivor in a Kiev hospital

Rodong-1 missile, which has a range of more than 600 miles (enough to reach Japan). In the short term, North Korea could deliver a bomb only by means of a plane or by special teams on the ground. But intelligence officials think it may have a bomb small enough for the Rodong-1 within six years.

China, meanwhile, has been upgrading its weapons capability, which used to depend on obsolete bombers and missiles. Russian experts are helping China develop a version of the SS-25 with multiple warheads and supplying China with nuclear triggers, large rocket engines and nuclear-propulsion technology for its submarines. "You have a pattern of discount shopping from Russia for the best technology that's scaring China's Asian neighbors," says Henry

Half a century after Hiroshima: Brain-damaged children, victims of nuclear tests in Kazakhstan



Sokolski, a nonproliferation official in the Bush administration.

That leads directly to another concern: that Russia—and, for that matter, Ukraine—will try to turn its nuclear expertise into cash. The Russians have told Energy Secretary Hazel O'Leary they are considering closing a reactor that produces plutonium at Tomsk. But by 1994, Russia plans to quadruple its arms sales over 1992 levels; the sales will include ballistic missiles.

Meanwhile, workers at the Hartron Institute, in the grimy Ukraine town of Kharkiv, make battery-powered toys and earn \$10 to \$15 a month; they once designed systems for missile guidance. It won't take much of a carrot to woo them, say, to Iran. CIA Director James Woolsey says "the current emigration and customs bureaucracies [of the former Soviet Union] cannot monitor more than the most critical personnel."

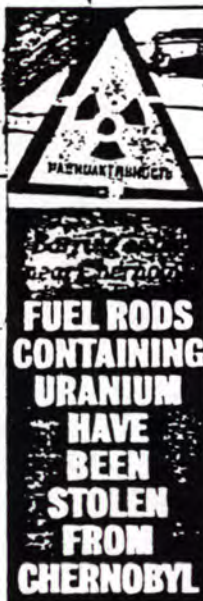
'Loose nukes': Dima Litvinov, the head of Greenpeace in Russia, worries about "loose nukes walking around Russia." With good reason: sources say that a draft study by the U.S. National Academy of Sciences has documented the disappearance of Russian highly enriched uranium—a key component for

bombs. The great fear of nonproliferation officials in the West is that such materials—deadly even in quantities that can be hidden in a suitcase—end up not just with rogue states but in the hands of organized crime and terrorists.

In this new climate, the cold-war mechanisms to control nuclear weapons are of little use. Safeguards by the International

Atomic Energy Agency, says Sokolski, "are very effective at keeping safe nuclear facilities in safe countries safe." Such measures did little good in Iraq and are quite inadequate in the chaos of the post-cold-war world. Both the CIA and the Pentagon are seeking new ways to counter proliferation, including training special commando teams to penetrate nuclear plants. But the theft from Chernobyl—still one of the most dangerous places in the world—shows the lengths to which nuclear smugglers will go. Nearly half a century after Hiroshima, the old doomsday clock is still ticking.

MICHAEL ELLIOTT with DOUGLAS WALLER, BOB COHN and DANIEL GLICK in Washington. ROBERT SEELY in Kiev and DORINDA ELLIOTT in Moscow



SINS OF A PARANOID AGE

Cold War: Desperate times made for desperate—and dangerous—measures

IN 1949, WHEN MOST AMERICANS wanted nothing more than to "go to the movies and drink Coke," as W. Averell Harriman once put it, the Soviets exploded a nuclear bomb. The onset of the cold war came as a cruel surprise. The United States had just won World War II. Was World War III around the corner? By 1951, when the CIA received an intelligence tip that seemed to indicate that the Russians were about to corner the world market in LSD, anxiety about communism had become paranoia. The CIA was particularly obsessed with mind control. At show trials in the East bloc, innocents with glazed eyes were confessing to impossible crimes, while American POWs in the Korean War were reportedly being "brainwashed" by the Chinese. Had the communists developed some new mind-bending drug that could be used as a mass weapon against the West?

The LSD scare, like many intelligence tips in that era, turned out to be bogus. But that didn't stop the CIA from taking steps to develop its own mind-control program, code-named MKUltra. The technique that most intrigued the agency was LSD, a new psychoactive drug that could induce hallucinations. Unfazed when one of the agency's own researchers jumped out a window after experimenting with LSD in 1953, the CIA hired prostitutes in Greenwich Village, N.Y., and San Francisco to slip LSD doses to unsuspecting johns. CIA researchers dutifully recorded the results from behind two-way mirrors. Dozens of unwitting lowlifes went on wild trips, but the agency never did learn how to control anyone's mind. The experiment was finally abandoned in 1963.

The nuclear experiments that are now coming to light are just some of the examples of how far America went in the cause

of combating global communism. In another phase of operation MKUltra, the CIA—seeking the perfect assassin—tried to create "guided animals." In one experiment, the agency wired up a cat (its tail was the antenna) that had a habit of wandering off the job and was eventually run over by a taxi. For years the Pentagon and the Atomic Energy Commission were conducting all manner of secret tests—from releasing clouds of radiation into the atmosphere in a determined attempt to build bigger and better bombs, to irradiating the testicles of prison inmates in order to find out how much would cause sterility.

As it turned out, almost all the reports of Russian superiority in the cold war were hyped. When the development of the U-2 spy plane allowed overflights in the mid- to late 1950s, it was discovered that the "bomber gap" and the "missile gap" were phony. The only gap was the other way around:

in 1961, the Pentagon had 98 missiles aimed at the Soviet Union, the Kremlin no more than 35 aimed at the United States.

For all its cold-war glamour, the CIA was not a very effective espionage agency in the late 1940s and early 1950s. Though it had reasonable success overthrowing left-leaning governments in the Third World, the agency utterly failed to penetrate the Kremlin (admittedly a difficult task against a police state). Still, it did not serve top leaders to admit this to the public.

In order to persuade lawmakers to pay for worthy causes like the Marshall Plan, it was sometimes necessary to make things "clearer than the truth," said Dean Acheson, President Truman's secretary of state. If that meant scaring people, so be it. Certainly, the people were ready to be scared: families built fallout shelters, while children learned how to duck under their desks.

Washington officials lied in part because they could get away with it. The press was cozier with policymakers in the 1950s, and lawmakers didn't really want to know what the CIA was up to, as long as the cause was battling the Red Menace. Hungry for higher budgets, the Pentagon inflated the threat it faced. And over time, even the most cynical politicians began to believe their own rhetoric. In the 1960 presidential campaign, John F. Kennedy was still warning about the missile gap. When his defense secretary, Robert McNamara, publicly admitted that none existed, Kennedy privately chastised him for telling the truth. McNamara apologized—and promptly ordered a massive buildup of America's nuclear arsenal.

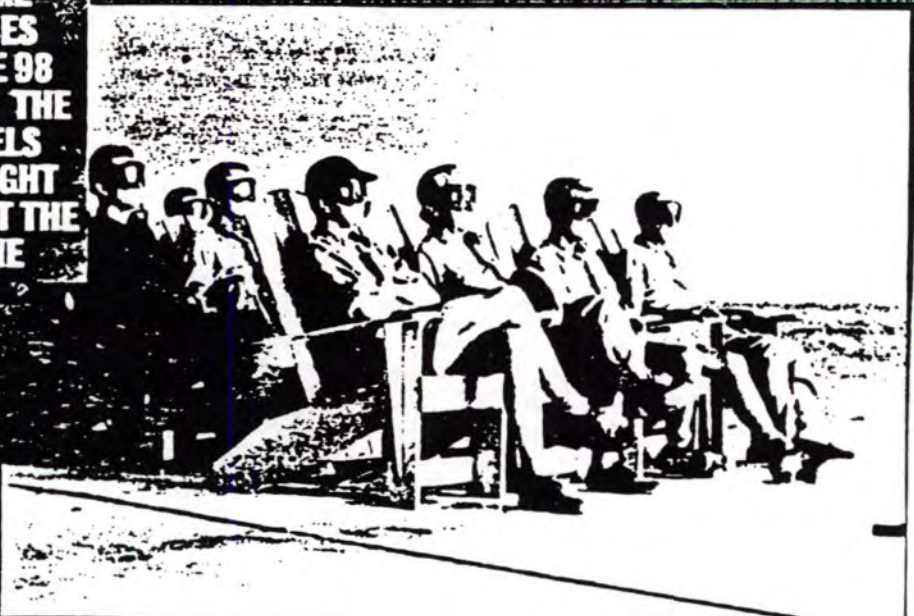
EVAN THOMAS

Show time: Viewing a nuclear detonation, up close and personal

BLACK STAR



**SOME
DOSES
WERE 98
TIMES THE
LEVELS
THOUGHT
SAFE AT THE
TIME**



■ SCANDALS

Fallout from Nasty Secrets

How the U.S. used its citizens as guinea pigs

ON A SPRING DAY IN 1950, U.S. SCIENTISTS perfecting techniques for tracking Soviet atomic tests packed a conventional bomb with radioactive material—probably lanthanum-140—and exploded it in the atmosphere near Los Alamos, New Mexico. No injuries were reported, but the fallout reached populated areas at least 70 miles away.

The Los Alamos test, one of many similar experiments described in a congressional report released last week, is just the latest in a series of disclosures from the early days of the atomic age, when the government often learned about the effects of radiation the quick and dirty way—by exposing unsuspecting civilians. Over the past month, a frightening array of nuclear experiments have come to light, including large-scale medical tests involving hundreds of patients. A series published in the *Albuquerque Tribune* detailed one experiment in which 18 people were injected with high concentrations of plutonium, apparently without their full consent. In another test, 800 pregnant women were exposed to radioactive iron in order to investigate its effects on fetal development. The testicles of 67 inmates at an Oregon state prison were exposed to X rays to determine how radiation might alter sperm production.

When the first reports of such experiments appeared seven years ago—in a congressional study titled *American Nuclear Guinea Pigs*—the Energy Department was less than forthcoming. This time, Energy Secretary Hazel O'Leary says the Clinton Administration's policy is to "come clean" about the radiation tests, and she has ordered the most thorough investigation ever into the experiments. The Energy Department has also promised to declassify millions of pages of secret documents related to past activities of the nuclear-weapons industry. The worst disclosures may be yet to come.



Warning sign: but nobody warned the subjects of the experiments

Hotline Created for Human Guinea Pigs

By John Eckhouse
Chronicle Staff Writer

P.C.3

In a bizarre Christmas gift to the nation, the Energy Department this week established a "human experimentation hotline."

Embarrassed by revelations that government scientists conducted dangerous biomedical experiments on U.S. citizens for decades, Energy officials will use the toll-free line to investigate the misdeeds.

It represents a new openness on the part of the agency, which for many years ignored or denied allegations it secretly tested the effects of radioactive materials on pregnant women, prisoners and other civilians. The Energy Department has acknowledged that many of the people ex-

posed to dangerous radioactive substances did not even know they were being used as human guinea pigs.

While some of the research led to major advances in medical treatment, most

Many of the records have disappeared or were destroyed in the past 45 years, however. That's apparently why the department wants people to call the hotline with details about medical and scientific

Most of the studies were conducted for the purpose of understanding the hazards of nuclear radiation

of the studies were conducted for the military purpose of understanding the hazards of nuclear radiation. Energy Secretary Hazel O'Leary promised earlier this month to release more details about the experiments, many of which remain classified.

experiments on humans conducted by the Energy Department and its predecessors, such as the Atomic Energy Commission.

"I think it's very encouraging and I've been as strong a critic of the DOE on this as anyone," said Arjun Makhijani, president of the Institute for Energy and Envi-

ronmental Research.

So far, however, information will flow only one way. Energy officials will listen, but won't exchange information with callers who dial 1-800-493-2998.

"The toll-free number has been established to serve only as a means for the public to input information," said a DOE statement. Energy officials were not available for comment yesterday because federal offices were closed, but it's known the department has hired an ethicist to provide advice on how to solicit information while protecting the privacy of those who step forward.

"Individuals may be willing to provide information if they know they can main-

EXPERIMENTS: Page C4 Col. 3

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tain their confidentiality," Makhijani said. "For example, people might have documents on the experiments on pregnant women at Vanderbilt University, while the school says all the documents were destroyed years ago."

In that experiment, Vanderbilt scientists fed radioactive iron to pregnant women to see what impact it would have. In another case in the 1970s, prison inmates in Washington and Oregon had their testicles exposed to very high levels of radiation. At the Oak Ridge National Laboratory in Tennessee, nearly 200 patients with cancer were bombarded with extremely high levels of radiation from cesium and cobalt isotopes.

Other experiments, research and weapons processing conducted between the end of World War II and 1988 included:

■ A dozen instances of dropping radioactive material from planes or releasing it

on the ground in order to follow its dispersal and to create new weapons. In a 1949 case investigated this year by the General Accounting Office, an Army plane released radiation measured at 1,500 curies — 100 times greater than the emissions during the emergency at the Three Mile Island nuclear power plant in Pennsylvania.

■ Nuclear weapons testing at the Atomic Energy Commission's Nevada test site, which spewed radioactive fallout across parts of Nevada and Utah. Al-

though the AEC said at the time the radiation levels were not high enough to cause health problems, the fallout killed sheep and caused an epidemic of cancer and birth defects.

■ The release of high levels of radiation at the government's nuclear weapons plant in Hanford, Wash. In 1990, the DOE acknowledged that thousands of residents of eastern Washington, Oregon and Idaho were secretly exposed to large quantities of radiation in the air, water and food for a quarter of a century.

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KANSAS CITY STAR

DEC 25 1993

U.S. seeks to learn fate of experiments' subjects

People were used in secret radiation tests.

The Associated Press

WASHINGTON — The Energy Department is trying to find out what happened to people who were used for secret radiation experiments, sometimes without their knowledge.

The department opened a toll-free "human experimentation hot line" Thursday. Anyone who has information about medical or scientific radiation experiments conducted on humans is being urged to call.

The number is 1-800-493-2998, and the Energy Department says the phone will be answered from 7:30 a.m. to 3:30 p.m. Central time Mondays through Fridays by experts from the department's office of environment, safety and health.

A spokesman said the number was established as part of the Energy Department effort to learn more about secret human experimentation conducted by the federal nuclear energy program in the 1950s and 1960s.

Energy secretary Hazel O'Leary earlier this month said about 800 radiation tests were conducted on humans, and that some of the subjects were unaware of the risks.

O'Leary's office has started to release formerly secret documents on past human experiments and bomb production by the Energy Department and its predecessor nuclear agencies.

Radiation experiments at the Battelle Pacific Northwest Laboratory included at least 319 hospi-

tal patients, employees and convicts, according to a report by *The Oregonian*, a Portland, Ore., newspaper.

The paper said a four-page summary of the Battelle experiments shows they ranged from injecting radioactive substances in to volunteers to irradiating prisoners' sex organs with X-rays.

The Battelle list came to light because of inquiries about the experiments on prisoners.

Researchers also confirmed that at least 235 newborns were injected with Iodine 131, a weak radioactive isotope, during a research series designed to learn how the normal thyroid gland works in young babies. The research on infants took place in Tennessee, Arkansas, Nebraska, Michigan and Iowa.

One scientist, Lester Van Middleworth of the University of Tennessee at Memphis, said results of the newborn studies were

widely published in the 1950s and 1960s and were well-known to experts in the field.

He said the studies used radioactive isotopes that were only about 1 percent as strong as those used in similar tests on adults, and that there were no reported injuries or ill effects to the babies.

The Battelle summary reports that researchers injected five persons with phosphorus-32, a short-lived isotope, in a 1963-64 test designed to find out how much radioactivity people were accumulating by eating fish from the Columbia River.

The Hanford federal nuclear facility in southeast Washington was then releasing radioactive elements into the river from eight plutonium-production reactors.

The human experiments were supported by the Atomic Energy Commission, NASA and the U.S. Public Health Service between 1951 and about 1975.

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NEWS EXPRESS

DEC 24 1993

DOE wants to know about tests

Toll-free line set up for news of human radiation studies

P-1 Staff and News Services

PAB

WASHINGTON — Hoping to find out more about radiation experiments conducted on Northwest prison inmates, hospital patients and volunteer subjects, the Department of Energy has set up a toll-free telephone line for callers to relay information about the tests.

The department unveiled the "human experimentation hot line" yesterday for anyone with information about medical or radiation experiments conducted on humans: (800) 493-2998. The DOE said the phone will be answered from 5:30 a.m. to 1:30 p.m. PST Monday through Friday by experts from its office of environment, safety and health.

A spokesman said the number was established as part of the DOE effort to learn more about secret human experiments conducted by the federal nuclear energy program in the 1950s and 1960s.

They included experiments with male fertility conducted during the 1960s on 131 inmates at the Washington State Penitentiary in Walla Walla and the Oregon State Prison in Salem. The tests involved irradiating prisoners' testicles to study whether radiation would sterilize them.

U.S. Energy Secretary Hazel O'Leary earlier this month said about 800 radiation tests were conducted on humans nationwide and that some subjects were not aware of the risks. The tests were conducted by the Energy Department's predecessor agency, the Atomic Energy Commission.

The male fertility studies were conducted by the University of Washington between 1963 and 1970. C. Alvin Paulsen, the UW professor who conducted them, said prison inmates volunteered for the tests, were paid for them and were told that the studies posed no known cancer risks at the time.

Such risks were widely publicized in media accounts when the tests were publicly disclosed seven years ago, leaving some prisoners worried that they may have suffered some effects. One prisoner said yesterday there has been no follow-up to the tests since they ended.

"I thought when all this stuff was brought out, somebody at least would talk to us about it, but nobody even did that," said Mike Briggs, 54, an experiment participant who is serving a life sentence at the Washington State Penitentiary for second-degree murder.

The Energy Department and Battelle Memorial Institute, which runs Pacific Northwest Laboratory for the department, conducted experiments on 317 hospital patients, employees and convicts, according to a summary produced by Battelle.

It shows researchers injected five people with phosphorus-32, a short-lived isotope, in a 1963-64 test designed to find out how much radioactivity people accumulated from fish from the Columbia River. The study involved three University of Oregon Medical School patients and two volunteers at Seattle's Swedish Hospital.

At that time, the Hanford Nuclear Reservation, which is owned by DOE, was releasing radioactive elements into the river from eight plutonium-production reactors.

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-26-93 SUN 23:15

DENVER-ROCKY MOUNTAIN NEWS DEC 25 1993

'Never again,' O'Leary says of atrocities

Energy secretary vows
to uncover experiments
done on U.S. citizens

By Eileen Welsome

Scripps Howard News Service

(A35)

ALBUQUERQUE — Energy Secretary Hazel O'Leary says she's determined to shine light on the



O'Leary

"darkest side of the Cold War" to ensure that unsuspecting Americans never again will be used in human experiments.

"Everyone I've talked to has compared (the experiments) to Nazi Germany," O'Leary said of the experiments conducted in the past four decades.

"I guess my comment would be, 'Didn't we hang people at Nuremberg (at the Nazi war crimes trials) for this kind of thing?'" she said.

O'Leary said she has no idea how many Americans have been used in experiments but said she is getting reports almost daily.

"Part of what we need to do here is focus on uncovering what some other colleagues have called perhaps the darkest side of the Cold War as we in the United States have known it," she said.

The Department of Energy in early December announced that it was beginning a massive review of hundreds of Cold War experiments in which U.S. citizens were used as unsuspecting guinea pigs.

The review was triggered in part by a series in *The Albuquerque Tribune* in mid-November that chronicled the lives of five of 18

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Hot Line Seeks U.S. Radiation Test Victims

DOE Wants to Expose Human Experiments

Associated Press

A7

The Department of Energy wants to hear from people who think they may have been used in federally supported radiation experiments.

The department unveiled a toll-free "human experimentation hot line" yesterday. Anyone who has information about medical or scientific radiation experiments conducted on humans is being urged to call.

The number is 1-800-493-2998, and the DOE says the phone will be answered 8:30 a.m. to 4:30 p.m. EST Monday through Friday by experts from the department's office of environment, safety and health.

A spokesman said the number was established as part of the DOE effort to learn more about secret human experimentation conducted by the federal nuclear energy program in the 1950s and 1960s.

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The Hanford federal nuclear facility in southeast Washington state was then releasing radioactive elements into the river from eight plutonium-production reactors.

The human experiments were supported by the Atomic Energy Commission, NASA and the U.S. Public Health Service between 1951 and about 1975.

Dawn Zimmerman, a Battelle spokeswoman, said the experiments described in the summary "are all that we know about since 1951."

However, she acknowledged that there might have been others for which no records survive and that some might still be secret.

Indozens of papers across country

ST. PETERSBURG TIMES DEC 24 1993

Test subjects can call hot line 3A

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NEWS EXPRESS

BALTIMORE SUN

DEC 24 1993

IN THE NATION

⁵⁷ Toll-free number created for people in nuclear tests

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Jewish student harassed over Christmas complaints

CONCORD, N.H. — A 13-year-old Jewish girl was threatened and jostled by classmates after she complained about Christmas decorations and religious caroling at her school.

Tiffany Tropp, an eighth-grader at Rundlett Junior High, said she was yelled at and teased. She said one classmate told her Christmas is about peace and love, then shoved her into a locker.

Klan cross can stand, Justice Stevens says

COLUMBUS, Ohio — The Ku Klux Klan's right to display a cross on the Statehouse lawn was upheld yesterday by a U.S. Supreme Court justice, a day after the cross was ripped down. Justice John Paul Stevens rejected the state's request to block a lower court ruling allowing the Klan to put up the cross.

344,800 Fords recalled, most of them '88 Escorts

DETROIT — Ford Motor Co. has recalled 344,800 vehicles for free repairs of defects. The recall involves:

□ About 22,000 1992 and 1993 Ford heavy-duty trucks and buses that have diesel engines with in-line fuel injection pumps. Two springs in the throttle linkage could break, causing the engine to race.

□ About 3,800 1993 Mercury Capris with automatic transmissions for risk of engine compartment fires.

□ About 319,000 1988 Escorts with 1.9-liter engines to correct an emission problem.

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Date: 12/23/93 Time: 08:53

WASHINGTON (AP) Energy Secretary Hazel O'Leary wants to give a

WASHINGTON (AP) Energy Secretary Hazel O'Leary wants to give a rebate of sorts to thousands of electricity users who for years have paid into a federal fund for disposing of nuclear waste, only to see the money sit in the U.S. Treasury.

The refund would go to people who use electricity generated by nuclear power.

O'Leary said Wednesday in an interview with The Associated Press that she hopes to work out a compensation plan for these electric ratepayers as part of the administration's fiscal 1995 budget proposal to be unveiled early next year.

The fund, which now has an estimated \$4.2 billion, is supposed to pay for developing a permanent storage site for tons of used fuel rods piling up at the country's 110 commercial nuclear power plants.

The nuclear storage facility was to be finished by 1998, but officials now estimate that it won't be completed until 2013 at the earliest. A definite site hasn't even been found, although the department is conducting feasibility studies on a location in the Nevada desert.

Last year about \$600 million was collected for the fund, but Congress authorized spending only \$260 million for continuing work on the Yucca Mountain site in Nevada. The fund surplus, meanwhile, is helping to narrow the federal deficit gap.

Meanwhile, the highly radioactive used fuel rods continue to pile up in storage pools at nuclear plant sites in 36 states. At least 20 of the plants will reach their full capacity for on-site storage within five years, officials have said.

The government "has some moral responsibility" to people who have been paying the surcharge for the waste fund because of "our inability to meet the 1998 date" for completion of a storage facility, O'Leary said.

It was unclear how much compensation the department would seek for the hundreds of thousands of utility customers whose electricity is generated from nuclear power. But she said she expects in the next fiscal year the trust fund will be taken "off budget" so expenditures from it will not count against deficit reduction caps.

The department also is trying to find a temporary location for centralized storage of the fuel rods, but no one has been willing to host such a facility, fearing it might become permanent.

On another issue during the 30-minute interview, Mrs. O'Leary acknowledged concern within the department that low energy prices, should they persist for a long time, may threaten the administration's plans for combating global warming.

The global warming strategy announced by Clinton last October calls for reducing so-called "greenhouse" gases, largely carbon dioxide, to 1990 levels by the end of the decade. But it relies exclusively on voluntary energy conservation and switching from fossil fuels such as oil to renewable energy sources.

With cheap oil, now near \$14 a barrel, and gas, users are less likely to conserve or switch fuels. If current energy prices were to persist for a lengthy time "clearly we would have a problem" relying on only voluntary measures, Mrs. O'Leary said.

She stressed that for energy prices to affect the global warming strategy, prices would have to be depressed for a long term. "We

might be alarming ourselves too much until we understand what the pattern is," she said. While declining to speculate what additional measures might be needed, she did not rule out some mandatory government controls.

Mrs. O'Leary also said:

The Energy Department will have to absorb budget cuts as part of the administration-wide effort to meet deficit reduction goals. She declined to provide figures, but department sources said the DOE fiscal 1995 budget is likely to be about \$900 million below its current \$18.6 billion.

She plans to pursue, as she has promised previously, thousands of secret documents on human testing during the Cold War nuclear weapons program and eventually plans to put them into a central archives for researchers to review. In some cases, Mrs. O'Leary said, records may have already been destroyed.

APNP-12-23-93 0853EST

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APNP-12-23-93 0853EST

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NATIONAL MARKET COVERAGE

TRANSCRIPT

FOR DEPARTMENT OF ENERGY STATION CNBC TV

PROGRAM McLaughlin CITY Washington, DC

DATE December 23, 1993 9:30 PM AUDIENCE

SUBJECT Interview with Secretary Hazel O'Leary

BROADCAST EXCERPT

JOHN MCLAUGHLIN: Cold war horrors. In recent days there have been shocking revelations about secret nuclear experiments conducted by the U.S. Government during much of the cold war period. One experiment involves 750 poor pregnant women who when they went for their prenatal care were given radioactive pills without their knowledge or consent. In another experiment, radioactive bombs were detonated near populated areas to see how far the fallout would travel.

The U.S. Department of Energy, DOE, also disclosed that 204 unannounced nuclear explosions were set off by the U.S. Government, and almost 34 tons of plutonium is stockpiled in six states.

Why did our government use unconsenting Americans as guinea pigs? And why are we suddenly finding out about it and these other matters 50 years later? And what other stunning secrets will be revealed?

We'll ask our guest, the person whom I noted earlier who is bringing glasnost to the Department of Energy, Secretary Hazel O'Leary. We'll take your phone calls at 1-800-752-CNBC, and your faxes at 202-467-0601.

I should mention at the outset that Secretary O'Leary has just gotten back from Russia where she was with Vice President Al Gore. And what happened over there -- you were in Moscow, right?

ENERGY SECRETARY HAZEL O'LEARY: Yes, I was in Moscow with the Vice President for the second meeting of the Gore-Chenamerdin (?) Commission. And my sub-commission subject area is energy, fossil energy, energy efficiency, and nuclear energy. And we worked on commitments that we had really outlined back in the summer in Houston involving projects to bring hard currency into Russia

through sale of their natural resources, to help them conserve energy so that they might sell more. And the reason we want this to happen is we want to stabilize that government, we want to bring the free market to the Russian federation and permit the Russians to now begin to invest in their own costs for nuclear safety, and perhaps most important, begin to control nuclear weapons and especially disarm weapons.

MCLAUGHLIN: What energy do they have to sell?

SECRETARY O'LEARY: Well, they've got a ton of natural gas. In point of fact, larger proven reserves in natural gas in Russia than in the United States.

MCLAUGHLIN: And we have a lot.

SECRETARY O'LEARY: We do have a lot. And until the real breakdown of the infrastructure, GasProm, which is the prominent state-owned gas company, was selling far more than any country in the world. They have proven petroleum reserves as well.

MCLAUGHLIN: A lot.

SECRETARY O'LEARY: A lot.

MCLAUGHLIN: But they have problems getting it out of the ground.

SECRETARY O'LEARY: They have a problem getting it out of the ground, they have a problem with the pipeline, infrastructure, and they also have a problem with attracting capital so that exploration and development can occur. And that means bringing structures for economic development -- banking, private property -- into the Russian Federation so that investors from outside of Russia will bring hard currency for capital or an investment, equity investments.

MCLAUGHLIN: Do they have mechanisms now that are facilitating that?

SECRETARY O'LEARY: Well, that's part of what we've been doing in our work in the commission, that is, helping the Russians to determine how best to draft laws to bring in banking, private property, exploration, and to help them with drafting model contracts so that private properties can enter into agreement.

MCLAUGHLIN: You know, the situation over there is so unstable politically...

SECRETARY O'LEARY: Absolutely....

MCLAUGHLIN: ...who would want to invest?

SECRETARY O'LEARY: Well, lots of people. You have to call months ahead to hire a room in any hotel in Moscow, and the lobby is filled with people with calculators, computers, doing bills and trying to write contracts because those who get in and get in early and find a way to penetrate both the market and solidify investment are going to reap rich resources. And we want that to happen for American businesses as well.

MCLAUGHLIN: What hotel did you stay at?

SECRETARY O'LEARY: I stayed at the Radisson.

MCLAUGHLIN: New hotel?

SECRETARY O'LEARY: Relatively new. Carlson family out of Minnesota.

MCLAUGHLIN: How comfortable was it?

SECRETARY O'LEARY: Pretty comfortable, thank you. Yeah. I have no complaint about the hotel.

MCLAUGHLIN: How was the food?

SECRETARY O'LEARY: The food was expensive but very great, and clearly brought in from the West.

MCLAUGHLIN: Did you have to cue up anything?

SECRETARY O'LEARY: No, absolutely not. But understand that, you know, I was cordoned and accorded all of the privilege of a government official, which is the same privilege we would accord the Russians.

MCLAUGHLIN: Now, you were there when Vice President Gore uttered his very strong denunciation of Vladimir Zhirinovsky.

SECRETARY O'LEARY: I was indeed.

MCLAUGHLIN: Right. Which was much more harsh than anything uttered by the President, who took the position that we should wait and see who actually gets into the Parliament. And the President turned out to be right on the money because there are more reformers in the Parliament than there are Zhirinovsky supporters combined with communists. But did you -- what did you think of the whole condition of -- did you move around Moscow?

SECRETARY O'LEARY: I did. And I have quite a few friends in Moscow that I knew well before I came to this job, so I have had contact with those friends in the three or four months that I've been working on....

MCLAUGHLIN: You know, the criminal activity in the Soviet Union is supposed to be horrendous. Did you hear things that would support that?

SECRETARY O'LEARY: I heard and also saw -- and again, I want to make it clear that I wasn't moving about the streets, but certainly heard and talked to others who expressed the idea that this was a concern. But I don't think we want to overplay that. You know, I've lived in capitals in the United States for years and I think they now have the same level of concern that we have.

MCLAUGHLIN: A lot of corruption then.

SECRETARY O'LEARY: Well, I'm not going to call that one. You know, I didn't see it, and I've learned in this business that if you didn't see it and witness it it's best not to call it.

MCLAUGHLIN: So, did you hear anything on the street or through your friends, and I know you have a variety of contacts, both social and political. Did you hear anything from them who -- those friends of yours about Zhirinovsky and how popular he is? Do the people like him, are they worried about him? Because he seems to be off the wall.

SECRETARY O'LEARY: I heard several things from a mix of friends. Number one, some sense that perhaps if the efforts to get paychecks to government employees, maybe to the military in a timely fashion, when that had been an issue. If that had been overcome perhaps Zhirinovsky would not have brought in the strong vote that he did. I think that's clear in the military, and I heard this from some people in mid-level government and other people at private dinner parties. But that perhaps made a big difference. The other piece was...

MCLAUGHLIN: So it was a protest kind of...

SECRETARY O'LEARY: It was a protest vote. And perhaps more important, I think, those of us who have talked to folks understand that the "coup" if you'll forgive me for not being so temperate, was not so much who they vote for but it was the guy who had the best campaign. Short-run campaign, very zippy, and he was out there and prominent. It was a protest vote.

MCLAUGHLIN: Yeah. It was a real professional campaign the way he ran his television ads and so forth.

SECRETARY O'LEARY: Yes, it was.

MCLAUGHLIN: We're talking to Hazel O'Leary. She is the Secretary of the Department of Energy. She's just gotten back from Russia, Moscow, and she's helping them out over there in both de-

nuclearizing, right? We haven't talked about that. Do you think that the de-nuclearization on your part is at all side-tracked or derailed or hindered by Zhirinovsky's -- this big 25% vote for him?

SECRETARY O'LEARY: I think not. And the progress I would point to is discussions we had both between the Vice President and the Prime Minister and between myself and Minister Makilov (?) who is their minister for atomic energy regarding focusing on closing down their nuclear weapons production plants. And in my mind this is a real breakthrough. What we have agreed to is scheduling meetings in January to begin to talk about focus on the close-down of Tomsk reactors, two of them, which have been the most concern and where they had the accidents this past spring.

MCLAUGHLIN: You're talking about civilian reactors?

SECRETARY O'LEARY: These are weapons reactors but are used now to provide powerful district heating, that is, heating the buildings, and the electricity in the region.

MCLAUGHLIN: Are they antiquated?

SECRETARY O'LEARY: Well, they're in bad shape, yes, by any standard that the West knows...

MCLAUGHLIN: They've had one accident, that's Chernobyl. Right?

SECRETARY O'LEARY: Yes.

MCLAUGHLIN: Has there been anything else?

SECRETARY O'LEARY: Yeah, well, at Tomsk there was a tremendous explosion caused by a hydrogen bubble that caused great releases, and it's something that people in the West have been concerned about for some time. We want those reactors closed. They're the three most unsafe reactors in Russia.

MCLAUGHLIN: Hazel O'Leary is here to talk about the cold war horrors that she uncovered, namely, experimentation with nuclear energy. And we're going to get into that in this next segment.

The telephone number is 1-800-752-CNBC. The fax number is 1-202-467-0601.

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[Commercial break]

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MCLAUGHLIN: Awful.

SEC. O'LEARY: I can tell you a story about that.

MCLAUGHLIN: Tell me the story about the pregnant women being administered without their knowledge or consent, what, radioactive material?

SEC. O'LEARY: Lead-derived isotopes.

I can tell you this. Basically, our people who run the office which we now call declassification, which used to be called classification, I did a breakfast with them yesterday to thank them for all the work they've done in declassifying the material that we released ten days ago.

MCLAUGHLIN: How many million pages?

SEC. O'LEARY: Oh God! I can't count the pages. Because what we've done is declassified information regarding specific events which now permit the declassification of many pages. We've got three miles of documents, you know, within the archives.

MCLAUGHLIN: Three miles.

SEC. O'LEARY: Three point three miles. Thirty three Washington Monuments.

MCLAUGHLIN: Are we talking about cubic feet of, you know, three dimensional? Wow! Three miles?

SEC. O'LEARY: Three miles of paper.

MCLAUGHLIN: Wow!

SEC. O'LEARY: And that's just what we have.

MCLAUGHLIN: Millions of pages.

SEC. O'LEARY: Just millions of pages of paper and millions...

MCLAUGHLIN: Are they all horror stories?

SEC. O'LEARY: No, good Lord. I mean, some of them. These so-called horror stories are coming, not so much out of the department's archives but are coming out of stories that are now being told by researchers, people in isolated places like Washington state, Massachusetts and, of course, the Tennessee story we know about, the pregnant women.

MCLAUGHLIN: What is that story?

SEC. O'LEARY: Well, the story involves the giving, it would appear again, because I haven't read the data. The data is not available. I'm told it was destroyed back in 1970. We are now trying to put our hands on some secondary information about these things.

MCLAUGHLIN: Did you get reports on the data?

SEC. O'LEARY: We've got reports. And I was talking to a, you know, 60-year-old guy today who's been doing this work for 30 years, and I said, when you read about this, when you heard about this, how did you react? And he said, "Secretary O'Leary, I cried." This grown man said, "I cried."

There's not a standard that I can attach today. Not a standard that I can attach looking back in that time that would excuse nor forgive or nor a focus on a need that would be so great to expose women and their unborn children.

MCLAUGHLIN: Three children are believed to have died from cancer that were in the womb when those experiments took place. Correct? What are you doing for them?

SEC. O'LEARY: Well, here's what we need to do, and here's where we are. First of all, this problem, this issue is monumental. Eight hundred experiments leading to, you know, day after day after day, people are revealing other facts.

We have used and contacted Ruth Faden, an eminent ethicist who is a professor at Johns Hopkins, to actually help us set up a process to try and get all of this information in and have someone other than the department, a group of eminent radiologists and ethicists, first of all, review this information and make determination with respect to, first of all, the question of consent. In some experiments we know about, informed consent and true and meaningful medical purpose. I'll cite an example.

Bob Alvarez who came to us from the Senate, who did a lot of this investigation earlier on, points out that his wife is beneficiary of some good and well done experimentation that allowed her, as a victim of Hodgkin's Disease, to be treated with some cobalt treatments, very experimental, which not only saved her life but saved her ability to bear children and may now have a family.

That's excellent experimentation. The kind you've been hearing about is not. And to me it represents the darkest side of the cold war and the nuclear area.

MCLAUGHLIN: Are there extenuating circumstances for those

horrors?

SEC. O'LEARY: None that I can see. I mean, you've read and I've heard of those who've tried to pronounce them. None that I can see nor understand.

MCLAUGHLIN: You know who John Simpson is.

SEC. O'LEARY: Yes, I know who he is.

MCLAUGHLIN: He's a retired astro physicist who worked on the Manhattan Project. He defended the tests. He said that radioactive dangers would be greater throughout the world today if research had not been done on humans. That's an incomplete statement of his defense. What do you think of that?

SEC. O'LEARY: Well, the issue is not so much the tests themselves. The issue is the informed consent.

MCLAUGHLIN: Um-hum.

SEC. O'LEARY: Both my parents were physicians, and in our household I was thought that consent had to be terrified consent. Meaning you had to know the downside, the most miserable downside of every procedure you were being exposed to. And only then did you have consent. Standards much like that were developed out of the Nuremberg trials.

At issue here is whether the people were informed. They knew, they understood.

MCLAUGHLIN: We'll be right back with Hazel O'Leary, Secretary of Energy.

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MCLAUGHLIN: "How do I know my milk --" I'm reading from a fax sent to you, Secretary O'Leary -- "my milk wasn't tainted with radioactivity in 1952. Suppose water in the west was exposed. It could explain the behavior of everyone, from Charles Manson to Ronald Reagan. Seriously, doesn't this open up the federal government to endless numbers of lawsuits for medical and behavioral problems in the future?"

SEC. O'LEARY: No, it does not. First of all, what we are in a position to do, not for the past but for today, is really measure the exposure and amount of radiation embedded in the air, also in the land and in the water tables. We know that. The reason we've released information all of the tests that we've informed the public about is so we can measure levels of exposure over time and clearly understand what that means.

Most of the cases and claims going back to the '50s are, quite frankly, barred by the Statute of Limitation. There are a set of cases involving the down-winders, those who were exposed to the release of radioactivity, not to bombs, as you said earlier, but simply to the release of radioactivity. I've been told clearly by our lawyers, have some claims.

My sense here is that what we're about is exposing wrongs, and people need to be compensated. And if that means the government has some obligation to do so, I'm willing to take those issues to the Congress of the United States and have them settled.

Most of the families who know that their family members were victims say they don't necessarily want compensation. They want the government to own up to these facts, also to apologize, which I do for our government, back at the -- in those times to get on with the grief and the mourning for that period and be certain that in the future, as we use science and technology to drive this nation, and we will and we do, that we are certain that the arrogance, the isolation, the shrouding and the secrecy don't lead to these kinds of abuses that are being reported today.

MCLAUGHLIN: The -- you are a paradox to some people because those who know you know that you believe in the civilian uses of and proper uses of nuclear energy. Correct?

SEC. O'LEARY: I do. Safe, reliable, economic.

MCLAUGHLIN: Okay.

SEC. O'LEARY: With the emphasis on safe. And desired by the citizens in the communities where they are being cited.

MCLAUGHLIN: And it's clean.

SECRETARY O'LEARY: It's clean if handled correctly, and it's the back end of the nuclear cycle, that is, handling the waste.

MCLAUGHLIN: And we have never had -- all of this excluded, but in the commercial uses of civilian nuclear energy we have never had the loss of a single life. True?

SECRETARY O'LEARY: You're putting me in a difficult position because...

MCLAUGHLIN: I'm not aware of any.

SECRETARY O'LEARY: ...because what you want to talk about is you want to talk about the kinds of things that have happened like at Chernobyl. But people die in industrial and electrical...

MCLAUGHLIN: Industrial accidents, but not because of radiation and not because of any radioactive spillage. In other words, it's a safe -- it has been historically safe. Three Mile Island was very worrisome.

SECRETARY O'LEARY: Yeah, and actually, what you're wanting me to do to attest to a fact that I cannot attest to. And the reason I'm not saying yes, you're absolutely right, is because I'm not certain and I haven't researched the data. The one thing I'm after here is building some confidence in people's ability to believe I'm telling the truth. I don't know that for a fact. I'll get it to you and get it back to you, but I can't jump all over that.

MCLAUGHLIN: But maybe -- I guess the basic question is, is your credibility as a proponent of the wise use of nuclear energy enhanced, notwithstanding the fact that you are making these exposes which are so horrifying. And the answer probably is that you are, your credibility -- for example, you've got a terrible problem with nuclear waste in this country, right?

SECRETARY O'LEARY: We all do, the nation has, the world has.

MCLAUGHLIN: Yeah. And how much nuclear waste do we have?

SECRETARY O'LEARY: Oh God, about plus 80 tons of the stuff.

MCLAUGHLIN: Where is it?

SECRETARY O'LEARY: It's at power plants, it's at research reactors all over the country, and needs to be collected, as the Congress has directed, and stored in a safe place where it can be contained and watched and handled carefully. That hasn't happened.

MCLAUGHLIN: But you are also concerned about nuclear waste in countries like Russia, am I right?

SECRETARY O'LEARY: I am, indeed.

MCLAUGHLIN: All right. And you've told the Russians, correct me if I'm wrong, send us your nuclear waste and we'll take care of it because we fear that if you hold on to it it will fall into renegade hands and be made into a bomb and then we will have a terrible set of realities.

SECRETARY O'LEARY: Exactly. And we're willing to buy that high enriched uranium to insure that it is handled safely. Blending it down.

MCLAUGHLIN: But we have no place to put it yet.

SECRETARY O'LEARY: But we can use that. If we can blend it down we can use it in the existing power plants to create energy, once again, removing it off the international marketplace and putting it in the hands of rogue nations. Good policy.

MCLAUGHLIN: Where are you going to put the true nuclear waste?

SECRETARY O'LEARY: Well, at the moment my responsibility as Secretary of Energy is to take a hard look at Yucca Mountain in Nevada to determine if the geology there will permit us to store the waste. We haven't answered that question yet. Can answer it in three years.

MCLAUGHLIN: I've been having this conversation with people in this business for 25 years...

SECRETARY O'LEARY: I know that.

MCLAUGHLIN: Twenty-five years!

SECRETARY O'LEARY: I know that, John.

MCLAUGHLIN: And these governors don't want it, the people don't want it, then you try to buy them off. That can sometimes work. What makes you think that you can it into Nevada?

SECRETARY O'LEARY: Here's the deal. I'm not sure that Nevada is the right place but the deal now is that there are 36 states in the union who have nuclear power plants with spent fuel that needs to be corrected and stored in some consolidated way. If Nevada's not the right site, and we'll answer that question scientifically, then we'd better be about finding another one.

MCLAUGHLIN: One final question here. Secretary O'Leary, so far you've done a great job. Do you have any political aspirations for higher elective office? Vice President or President, for instance?

[Laughter]

SECRETARY O'LEARY: No.

MCLAUGHLIN: No?

SECRETARY O'LEARY: No. No.

MCLAUGHLIN: You couldn't be talked into it?

SECRETARY O'LEARY: I could not be talked into it.

MCLAUGHLIN: Well, this is going to be a crushing blow to many of your admirers.

SECRETARY O'LEARY: I'll bet. I'm going to work on my tennis game when this is over.

MCLAUGHLIN: Well, it's great having you as my guest, and good luck with all of these -- you're going to have some more revelations coming in June, right?

SECRETARY O'LEARY: In June we will be reporting more tests -- not more tests, I'm sorry. We will be reporting plutonium produced at each one of our sites, it's stored over time at each one of our sites.

MCLAUGHLIN: Are these horror stories?

SECRETARY O'LEARY: No, these are not. The horror stories result from information that people have known and are now feeling free to put into the public domain. And I think it's good. We need to get that. We need to get all this information out, we need to assess it, we need to compensate people.

MCLAUGHLIN: Thanks for being my guest, Secretary O'Leary.

Plutonium Exposure

A10

I, too, was saddened and appalled, along with Energy Secretary Hazel O'Leary, by the revelation of injection of plutonium into human beings by agents of the U.S. government (Dec. 8). However, I do not share her shock or surprise. The incident is but one of many sometimes even more reprehensible acts by those who collect our taxes and spend our money.

The Opinion pages (Dec. 12) adapt a book describing the incredible downwind radiation exposure at Hanford (Bookmark, Michael D'Antonio). A letters column on Aug. 4, 1985, included a letter by a onetime Los Alamos scientist, Theodore Forrester, stating that the A-bombs dropped on Japan were not a requirement of war but a test conducted against live targets. Is it unthinkable that the same Gen. Leslie Grove could have ordered injection of plutonium into 14 people?

It seems the differences between the happenings in Hitler's Germany or Stalin's Russia and those recorded here are those of quantity, not principle. There is yet another difference: Our taxes pay for these atrocities. In a very real sense we are responsible for them.

If we are to find answers, we must look at the premises underlying our society. Contrary to the visions of our Founding Fathers we have adopted the notion that society's needs supersede those of the individual. Since the needs of our society have become those defined by the political government, the individual can be sacrificed at will. This is the operational result of Jeremy Bentham's dictum, "the greatest good for the greatest number." Until this changes, we should not find any happening surprising no matter how reprehensible.

C. R. ESTES
Camarillo



Hazel O'Leary

200 infants fed radiation in '50s, '60s

By Rae Tyson
USA TODAY

3A

More than 200 babies in five states were intentionally injected with radioactive iodine during government experiments in the 1950s and 1960s, medical documents show.

The fate of the infants given the radiation in Tennessee, Michigan, Nebraska, Arkansas and Iowa is unknown. Researchers apparently never contacted the test subjects again to see if they had suffered ill effects.

"I have to be concerned," says Lester Van Middlesworth, a University of Tennessee researcher who experimented on seven infants in 1953. "I had full intentions of following them but was unable to do so."

Considered safe at the time, radioactive iodine can cause cancer, researchers now know.

Details of the experiments — intended to find a quick test for thyroid problems — are the latest disclosures on nu-

clear research on civilians during the Cold War.

Energy Secretary Hazel O'Leary this month ordered the release of thousands of previously secret documents.

"What we have seen is just the tip of the iceberg," says Alexander Capron, a law and medical professor at the University of Southern California.

The tests at university-affiliated hospitals eventually proved an unreliable predictor of thyroid problems, which can lead to mental retardation.

Ethicists say similar tests wouldn't be allowed today. Doctors since have developed a simple blood test.

All the babies apparently were tested with consent of their parents.

The experiments were funded by the defunct Atomic Energy Commission. Experiments were done in:



By Tim Dillon, USA TODAY
O'LEARY: 'Expose impact' of Cold War

► Memphis. Seven newborns were injected at now-closed John Gaston Hospital, which drew mostly from low-income, minority patients.

Six babies were African-American, though Van Middlesworth says neither race nor income were factors in their selection.

"It was the only facility available to me," he says.

► Detroit. At least 70 newborns were injected at Harper Hospital, affiliated with Wayne State University, in 1954.

Only one of five doctors involved is still on the hospital roster, and Allen Sosin doesn't remember the research, spokeswoman Julie Niemeth says.

► Omaha. At least 12 newborns were injected at the University of Nebraska Medical Center in 1959. Of the three doctors involved, only one — Eugene VanHove — could be located Wednesday. VanHove, now living in Indianapolis, could not recall details, university spokesman Tom O'Connor says.

► Little Rock. At least 89 infants were injected at the University Hospital of Arkansas in 1960. None of the researchers is still with the university.

"We've had some difficulty reconstructing activities of 30 years ago," spokesman Mark Cartwright says.

Nevertheless, Cartwright says experts are convinced the infants — who were between 3 and 7 days old — "did not suffer ill effects."

► Iowa City, Iowa. Twenty-five infants were injected at the University of Iowa hospital in 1963. None of the four doctors involved is now with the school.

Research rules are stricter today. "This research would not be done today," says David Thomasma of the Loyola University Medical Center.

Other experts say the researchers — and the universities — could be held liable if any of the infants developed medical problems related to the exposure.

DEC 22 1993

Babies given radioactive injections in '53

Associated Press

MEMPHIS, Tenn. — Seven newborn infants were injected with radioactive iodine in 1953 in hopes of finding a medical test for thyroid disease, said a scientist who lost track of the children a few years later.

Lester Van Middlesworth, a doctor and researcher at the University of Tennessee, Memphis, said he thought the infants were in no danger, though thyroid cancer or other thyroid disease can result from overexposure to iodine-131, the substance used in the study.

Van Middlesworth, who conducted the study, said the Atomic Energy Commission — predecessor of the federal Energy Department — financed the study. He said the babies' mothers gave permission for the injections. The study was inconclusive, and he ended it.

"Since the use of radio-iodine to study thyroid function was a standard procedure at the time in adults, we figured let's try this in newborn infants," Van Middlesworth said.

Robert Summitt, dean of the state medical school, said current review standards for research on humans likely would prevent such studies.

"We followed federal guidelines then, and we follow federal guidelines now. Federal guidelines have changed in the interim," Summitt said.

The injections were given at John Gaston Hospital, a public hospital that drew a large number of low-income patients and was staffed by doctors from the medical school.

Van Middlesworth said he has lost his study records and no longer knows the names of his subjects. He said the injected iodine should have broken down in 30 to 40 days.

He said similar studies, some using orally administered iodine, also were conducted in the 1950s and 1960s in Detroit; Omaha, Neb.; Little Rock, Ark.; and Iowa City, Iowa.

• Van Middlesworth said he and

other researchers were looking for a test for thyroid disease in infants. The thyroid gland traps radioactive iodine.

Blood tests, not involving radiation, are used now for such purposes.

The federal Energy Department said last week it will declassify evidence of a dozen secret radiation experiments conducted over New Mexico, Tennessee and Utah in 1948 to 1952.

It was reported over the weekend that 751 pregnant women at Vanderbilt University in Nashville were given iron pills containing radiation in the 1940s to trace absorption of iron.

Radioactive iodine tested on infants in '50s, doctor says

SCRIPPS HOWARD NEWS SERVICE **BY**

ALBUQUERQUE, N.M.—Seven newborn boys, six of whom were black, were injected with radioactive iodide in the early 1950s at a hospital in Memphis as part of a study funded by the federal government.

Lester Van Middlesworth, the scientist who conducted the Memphis study, said it was one of at least five studies conducted in different parts of the nation on a total of 235 newborns and older infants.

Van Middlesworth lost track of the babies several years later, and in a recent interview, said he doesn't know whether the radioactive injections could have harmed the children.

"Naturally, we hoped there was no damage," said Van Middles-

worth, a professor emeritus of physiology, biophysics and medicine at the University of Tennessee's College of Medicine.

Scientist John Gofman of Berkeley, Calif., one of the world's leading experts in the dangers of low-level radiation, said such an experiment would have increased the risk of getting cancer.

"It's like saying, 'We're going to visit cancer on some of you—not necessarily all of you—but we have increased the risk individually and some of you will get it,'" Gofman said. "It's not a nice thing to do to children."

Mike Gauldin, the director of public affairs at Department of Energy headquarters in Washington, D.C., said the department knows nothing about the Memphis study.

Energy Secretary Hazel O'Leary has promised to review some 800 radiological experiments on American citizens during the Cold War.

The infants used in Van Middlesworth's study were injected in 1953-54 at John Gaston Hospital, a now-defunct facility operated by the City of Memphis and staffed by physicians from the University of Tennessee's medical school, Van Middlesworth said.

Van Middlesworth said the mothers of the infants gave permission for the injections. "We told them it was important in the evaluation of the thyroid function of the newborn."

Many of the mothers subsequently gave up the babies for adoption, Van Middlesworth said.

Similar studies were conducted in Detroit; Omaha; Little Rock, Ark.; and Iowa City.

Published in such journals as

Pediatrics, the American Journal of Diseases of Children and the Journal of Nuclear Medicine, the reports show that scores of premature and normal infants—some only minutes or hours old—were injected or ingested radioactive iodine.

Two of the studies, including the Memphis project, were supported by grants from the Atomic Energy Commission, the Energy Department's predecessor. But others were supported by grants from the Public Health Service, the National Institute of Arthritis and Metabolic Diseases and the American Cancer Society. The racial makeup of the infants is not identified in those reports.

Race, Van Middlesworth said, was not a factor in the selection of the Memphis newborns. "It was primarily a charity hospital and a

large percentage of the charity internees were black. I guess not more than 10 or 15 percent of the patients were white," he said.

Van Middlesworth said the Memphis infants were injected with radioactive iodide to study the thyroid function in newborns. A check of a new newborn's thyroid function, which today is measured through a blood test, is required in every state, he said.

Iodine 131, which disappears from the body in about 80 days, still is widely used today in diagnostic work on the thyroid gland. It is also used in the treatment of hyperthyroidism and some forms of thyroid cancer. Radioactive iodine is rapidly taken up by the thyroid, so the speed at which it accumulates helps doctors determine if the thyroid is overactive or underactive.

DEC 22 1993

Needed: a full accounting

■ Government must detail radiation experiments as quickly as possible, and potential lawsuits be damned.

All 18 of the U.S. civilians who were injected with plutonium by our government in the 1940s to determine what doses workers might be safely exposed to are dead now, "though some lived for several years" after the experiments, the Department of Energy revealed on Dec. 7.

How chilling is that phrase, "lived for several years." Plutonium, once ingested into the human system, is fatal. What was the quality of those lives, we wonder? Did these human subjects — apparently uninformed in any meaningful way of what had been done to them — suffer agonizing pain as their limbs swelled, their hair and teeth fell out, and strange rashes that would not heal covered their bodies?

Were they ostracized by friends, families, even spouses who — not knowing the cause of their illnesses — feared they might be contagious?

"It left me appalled, shocked and deeply saddened," Energy Secretary Hazel O'Leary said about the plutonium injection experiments. "It is apparent that informed consent could not have taken place."

As to the notion that government scientists acted in ignorance of the radioactive metal's toxicity, this is a quibbling defense. Scores died during the brief and tragic period around the turn of the century when the Curies' discovery of radium was hailed as a medical breakthrough and "radium clinics" sprang up both here and in Europe.

More ghastly deaths followed — some as late as the 1940s — among the factory women who

used to wet their brush tips with their tongues to paint the numbers on glow-in-the-dark radium watch dials.

If scientists did not suspect the toxicity of plutonium it can only have been through some willful suspension of their critical faculties.

Now, this week, comes additional news that researchers gave radioactive pills to 751 pregnant women in Tennessee in the 1940s, and 20 years later fed "packaged fallout" from the Nevada Test Site, in capsule form, to University of Chicago students.

Vanderbilt officials said they don't know if the women were told of the possible effects of radiation or even that they were being given radioactive pills. But officials contend the 27 University of Chicago volunteer "fallout eaters" did give their informed consent.

It is not even clear how many people were subjected to such experiments. The energy department said 600 on Dec. 7, but a 1986 congressional report set the figure at 695. Is there overlap between those numbers and the Vanderbilt women, or is the total now 1,446?

Hatred and fear of the government are not conducive to a law-abiding society. Until we have a full accounting of such incidents — ranging as they appear to from simple stupidity up the scale to virtual criminal sadism — it will be hard to refute those who choose to believe all manner of paranoid scenarios, contending that even these 1,446 are "just the tip of the iceberg." Fear of lawsuits is no excuse; the feds must now truly "come clean."

Expert says radiation not smoking caused cancer

By Warren Bates
Review-Journal

Even though former Nevada Test Site workers suing the government smoked heavily, their cancers likely were caused by radiation on the job, an epidemiologist testified Monday in federal court.

Beginning the second week of the trial in the case of families who allege radiation exposure at the test site, Dr. Edward Radford said smoking did no more than promote a disease that already was under way.

Former test site worker Eugene Haynes was a 1 1/4 pack-a-day smoker; Harry Giesler smoked from age 15 until his death; lead plaintiff Keith Prescott was a pack-a-day smoker; and Calvin Tuck was a smoker and an alcoholic, Radford testified.

In each case, Radford went through medical histories of the men and said that unusually high exposure to radiation was a "contributory cause" of cancer.

Radford is a former professor at Oxford University and University of Pittsburgh and is a member of a public health advisory group formed after the 1979 nuclear accident at Three Mile Island. He is a consultant on radiation cases and has testified in a dozen trials.

Prescott and five surviving families are asking U.S. District

Judge Philip Pro for damages from the government.

"The role of cigarettes is generally that of a promoter, radiation is an initiator," Radford testified. He pointed to the workers' own high levels of radiation — measured in rems — as evidence supporting his conclusion.

Haynes suffered an exposure of 39 rem in a single incident when he was exposed to a contaminated area in 1955. The maximum exposure thought to be safe in a year is 5 rem.

Prescott attorney Dale Haralson said the other five men suffered long-term exposures ranging respectively, at the upper end, between 16 and 60 rem.

Radford said the types of cancers caused, such as pancreatic multiple myeloma, bladder and colon were more typical among radiation victims, not smokers.

He testified that even Haynes' bronchial cancer was likely radiation-caused.

Government attorney Leon Toronto suggested on cross examination that Radford was not the expert Prescott's attorneys portrayed him to be.

Toronto suggested Radford had not kept up with academia since his retirement in 1985, that most of his studies did not deal with radiation cases and, as a physician, he had not treated patients with any regularity since 1949.

Radiation Tests on Women Confirmed

Pregnant Civilians Took Radioactive Pills in 1940s, University Says

Associated Press **A9**

NASHVILLE, Dec. 20—Researchers at Vanderbilt University gave radioactive pills to pregnant women during the 1940s, university officials have confirmed.

A follow-up study during the 1960s concluded that three children born to women who took the pills likely died because of the tests.

The revelation accompanied other recent announcements by the Department of Energy about previously secret nuclear explosions and tests on human subjects conducted since World War II. DOE is looking for information on the Vanderbilt experiments or other radiation tests performed on civilians during the Cold War, said department spokeswoman Mary Ann Freeman.

On Dec. 8, DOE revealed that researchers gave radioactive pills to

751 pregnant women seeking free care at a prenatal clinic run by Vanderbilt University.

The pills exposed the women and their fetuses to radiation 30 times higher than natural levels, about the same as an X-ray. The doses were not considered unsafe at the time.

In a March 1951 report in the American Journal of Obstetrics and Gynecology, the researchers said they wanted to study iron absorption in pregnant women.

That article does not mention monitoring the long-term effects of radiation on pregnant women or their children. But a Vanderbilt follow-up study in the 1960s shifted its focus to that subject.

A study published in 1969 in the American Journal of Epidemiology concluded that three of the children born to the women likely died because of the radiation exposure: an

11-year-old girl who died of a tumor; an 11-year-old boy who died of cancer; and a 5-year-old boy who died of lymphatic leukemia.

Vanderbilt officials said researchers kept documents of the study until they were destroyed in the 1970s.

"The researchers who were working on that maintained their own files," said Vanderbilt spokesman Wayne Wood. "They were not Vanderbilt property. They belonged to the researchers themselves."

Vanderbilt officials said they don't know if the women were told of the possible effects of radiation or even if they knew they were being given radioactive pills.

Sen. Jim Sasser (D-Tenn.) has asked Energy Secretary Hazel R. O'Leary for an expanded report on the radiation experiments. He called the Vanderbilt study "deeply disturbing" in a statement Saturday.

Radiation testing shown in documents



By Tim Dillon, USA TODAY
O'LEARY: Secrets out, 2A

By Rae Tyson
USA TODAY

1A

Pregnant women fed radioactive pills without their knowledge. Prisoners paid \$5 to have X-rays made of their genitals. Radiation bombs detonated near populated areas.

Science fiction? No.

All were government sponsored, conducted in top secret as part of the Cold War.

"We were shrouded and clouded in an atmosphere of secrecy," says Energy Secretary Hazel O'Leary. "We were in a struggle for survival."

But with the Cold War won and the government coming clean, hidden documents have emerged, revealing a government so obsessed with nuclear weaponry that its own people sometimes were treated like laboratory rats.

And these revelations may be just the beginning.

The documents made public are a "toe in the bathtub" of 32 million pages of material about the 50-year-old nuclear program, says O'Leary, who promises more disclosures.

So far, the material depicts a tense and unhappy time, driven by fears of the Soviets, Chinese and their nuclear weapons. U.S. doctors, desperate to learn more about the impact of radiation exposure, were guided by medical ethics that condoned human testing — unlike today.

"It confirms our suspicions," says Herman Agoyo of the Eight Northern Indian Pueblo Coalition in New Mexico, one of three states where secret radiation tests were done.

Although the details have just emerged, these experiments are not the government's only use of human guinea pigs. In Tuskegee, Ala., the Public Health Service conducted a study of syphilis by leaving black males infected and lying about having treated them. The testing ended in 1972. And the CIA in the 1960s worked with Canadian researchers on mind-control by giving people the hallucinogen LSD.

Still, the newly declassified documents paint a chilling and sweeping picture of post-war atomic research. It includes:

► Inmate testing. From 1963-71, scientists used Oregon and Washington prisoners to test radiation effects on sex organs.

The tests were launched after a serious accident at the government's Hanford nuclear plant in Washington exposed workers to radiation. Researchers say the 1962 incident uncovered significant gaps in medical knowledge.

"It was clear we needed more information," says Dr. C. Alvin Paulsen, a retired professor of medicine at the University of Washington, who conducted inmate experiments.

Prisoners were paid \$5 a month to have their testes exposed to X-rays at extremely high doses. Inmates also were paid \$10 for each biopsy performed on their testes; they got a \$100 bo-

nus for completing the program.

Though tests showed that high X-ray doses induced temporary sterility, researchers didn't track inmates to see if there were other complications. "You can't treat (inmates) like a bunch of animals and follow them around," says Paulsen.

The experiments, along with most other radiation-related research, were funded by the Atomic Energy Commission, predecessor to the Department of Energy.

► Pregnant women. In the late 1940s, 751 women went to Vanderbilt University in Tennessee for prenatal care. They ended up as subjects in a study using radiation.

At the time of the experiment, according to *The (Nashville) Tennessean*, the only information on radiation's effects on pregnancy came from Japanese women who had survived atomic blasts at Hiroshima and Nagasaki during World War II.

The women, unidentified because records have been destroyed, were given radiation doses as much as 30 times higher than natural radiation. One of the mothers given the radioactive pills gave birth to a girl who died at 5 from lymphatic leukemia, an illness associated with radiation exposure.

At least two other children also died of cancer.

O'Leary doubts that any of the subjects had agreed to be in the experiment. "By the standards of today it is apparent that informed consent could not have taken place," she says.

Similar tests were done at the University of Rochester in New York, the University of Chicago and the University of California Hospital at San Francisco.

Using Freedom of Information requests, *The Albuquerque Tribune* identified five of the subjects, including Eda Schultz Charlton, who was injected with plutonium at the University of Rochester. Charlton died in 1983 at the age of 85.

O'Leary says her department will make every effort to uncover additional information on the tests — information that could result in lawsuits against the federal government.

Releasing documents puts "the government in some jeopardy," she says. But "we have to face these issues squarely."

► Government workers. At least 18 people — presumably government employees — were injected with plutonium in the 1940s. Though details are sketchy, the workers apparently were involved in the Manhattan Project, which led to the first atomic bomb. All 18 have since died.

O'Leary says she plans to release additional information about the plutonium tests in June. All told, more than 800 experiments involving 600 individuals were conducted under Atomic Energy Commission auspices.

► Intentional fallout. From 1948-52, at least a dozen secret tests were conducted in the populated areas of Los Alamos, N.M., Dugway, Utah, and Oak Ridge, Tenn., to see how radioactive fallout would travel.

In the New Mexico test, it traveled as far as 70 miles.

In some instances, radioactive material was dropped from a plane; in others, radioactive bombs were detonated on the ground. Though records do not indicate where the fallout landed, at least three pueblos are in close proximity to the probable New Mexico test site.

Some angry pueblo residents want health studies.

Says Gilbert Sanchez, lieutenant governor of the San Ildefonso Pueblo: "When a population of one ethnic group is being affected, and one generation can be wiped out with one swish of the pan, it's ethnic genocide."

1940s radiation experiment alleged to kill 3 children

Associated Press

2A

NASHVILLE, Tenn. — Researchers at Vanderbilt University gave radioactive pills to pregnant women during the 1940s.

A follow-up study during the 1960s concluded that three children born to women who took the pills likely died because of the research.

The Department of Energy is looking for information on the exper-

iments at Vanderbilt or other radiation research performed on civilians during the Cold War, said Mary Ann Freeman, a department spokeswoman.

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In a March 1951 report in the *American Journal of Obstetrics and Gynecology*, researchers said they wanted to study iron absorption in pregnant women.

The article does not mention monitoring the long-term effects of radiation on pregnant women or their children. But a follow-up study in the 1960s shifted its focus to that subject.

A study published in 1969 in the *American Journal of Epidemiology* concluded that three children likely died because of the radiation exposure.

They were an 11-year-old girl who died of a tumor, an 11-year-old boy who died of cancer and a 5-year-old boy who died of lymphatic leukemia.

Vanderbilt officials said researchers kept documents of the study until they were destroyed in the 1970s.

Vanderbilt officials said they don't know if the women were told of the possible effects of radiation or even if they knew they were being given radioactive pills.

Sen. Jim Sasser, D-Tenn., asked Energy Secretary Hazel R. O'Leary for an expanded report on the radiation experiments and called the Vanderbilt study "deeply disturbing."

The Energy Department promised last week to find and declassify evidence of a dozen top-secret radiation experiments conducted over New Mexico, Tennessee and Utah from 1948 to 1952.

ALBUQUERQUE JOURNAL

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Government Exceeds the Worst Suspicions



Richard Reev
SYNDICATED COLUMNIST

NEW YORK — "Paranoia" is defined by Webster as "a tendency on the part of an individual or group toward excess or irrational suspiciousness and distrustfulness of others."

You hear from a lot of paranoids in my business — or you think you do. Month after month, year after year, reporters and columnists get dozens, sometimes hundreds, of letters from men and women claiming someone or something, usually the U.S. government, is out to get them personally.

"Letters" is often a euphemism for thick folders and dossiers of old correspondence and ravings about plots involving John Kennedy and Marilyn Monroe and Wall Street bankers, Jews, Masons, the pope, mad scientists, ex-wives, government killer squads, and alleged nuclear implants and behavior devices involving the military or the CIA.

Almost always you throw them away. You know if you answer, even if you just acknowledge receipt, more packets will come — and your name will be part of the next file.

But you look at them first, remembering the old line that even paranoids sometimes have real enemies. And instincts nag at you, saying something in those stacks is probably true. It is not so much that truth is stranger than fiction, but that fiction is based on truth — and so are some of the ravings.

In Washington, I remember the nervous laughter of young reporters when a famous editor told them that late on quiet nights in the 1950s you could hear screams of pain coming from old warehouses along the Potomac River in Georgetown where the CIA was supposed to teach torture techniques to the police and military of the Free World.

And now this Christmas season, in a sickening set of revelations, it does turn out that the paranoids were right about a good deal of nuclear experimentation and U.S. government involvement in murder — and official lying and cover-up.

It began for me last week when the National Security Archive and the Center for International Policy — two of the kind of cantankerous Washington organizations sometimes dismissed as "paranoiac" — released recently declassified government documents showing that as late as three years ago the U.S. military was involved in the organization and training of "death squads" in El Salvador.

"My worst fears are realized," wrote the U.S. ambassador, William Walker, in an October 1990 cable from the embassy in San Salvador to the State Department in Washington. He had learned that the U.S. training of anti-communist Salvadoreans called Los Patriotas "was being used as a cover for death-squad activities."

In our government, it seems, they lie to each other, too. Then they lie to us. In this case, the

death squad activity had been covered up by careful "sanitization" — blacking out the incriminating parts — of U.S. documents originally released in the 1980s in an effort to show that death squads no longer existed. The fuller versions were released only under pressure from U.N. investigations resisted by the U.S. government.

Then, in the last few days, government and press reports (including investigation by Sen. John Glenn and The Albuquerque Tribune) have proved that some of the most "paranoid" of suspicions about the government are true. The United States did test the effects of nuclear radiation on innocent and unsuspecting Americans. There were more atomic bomb tests than ever admitted. Radiation was released into the atmosphere in the 1950s so that its effects on people could be secretly tested before it was used on enemy soldiers. Americans were injected with plutonium without being told. Human guinea pigs. Nazi stuff.

One deck of headlines in The New York Times last Friday was amazing, at the limit of credibility, decency and sanity.

"Nuclear Scientists Irradiated People in Secret Research"

"A New Light on the Past"

"Energy Secretary Plans to Open Files Covering 3 Decades of Experiments on Humans"

In the past? At the risk of sounding paranoid, I doubt it. Thousands of people with impressive public and private titles had to lie for years to cover up such activity. It is the shame of the nation, a stain on the heart of America.

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DEC 20 1993

'40s women fed radiation

Pregnant, poor part of experiment

By Timothy Cornell **A1**
The Nashville Tennessean

NASHVILLE — More than 700 poor women who went to Vanderbilt University's prenatal clinic for free pregnancy care in the 1940s became subjects in a government radiation experiment.

The experiment, which may have caused cancer in at least three children, is under new scrutiny as the Department of Energy gathers documents on nuclear research done on civilians during the Cold War.

Energy Secretary Hazel O'Leary says the department "will make every effort to declassify relevant documents."

Sen. Jim Sasser, D-Tenn., calls the study of 751 women "deeply disturbing."

"If they did not give consent, I would like to know why the experiments were performed," he says.

University officials say they don't know whether the women were told of the dangers of radiation or whether they even knew about the experiment. All documents were destroyed in the mid-'70s, they say.

The women were given radiation doses as much as 30 times higher than natural radiation — about the same as an X-ray — then considered safe.

One mother given radioactive pills gave birth to a girl who died at age 5 from lymphatic leukemia.

Another girl died of a tumor at age 11 and a boy, whose mother was fed the pills in her 20th week of pregnancy, also died from cancer at age 11.

At the time, the only data on radiation's effects on pregnancy was from Japanese survivors of the atomic blasts.

Another Vanderbilt study in the 1960s, funded in part by the Atomic Energy Commission, concluded the deaths were likely to have been caused by the radiation pills.

"The question really falls to whether we should apply the standards we have now to the 1940s," says Wayne Wood, a university spokesman. "In the 1940s, shoe salesmen used X-rays to measure shoe sizes."

'Peaceful Uses of Plutonium' (Cont'd) A24

In his Dec. 7 letter defending the reprocessing of irradiated nuclear fuel in the new Thorp plant in the United Kingdom, K. G. Jackson, group director of International Nuclear Fuels, offers technical arguments of varying degrees of persuasiveness but does not address the central nonproliferation problem. The very fact of starting up the plant establishes a precedent and justification for any country to do the same and extract

bomb-grade plutonium even though, ostensibly, it may be destined for use in a peaceful program.

Although Britain and Japan are not nonproliferation concerns, other countries obviously are (e.g., North Korea) or could have the potential to become so, and if they chose to justify such a plant on the basis of a prospective fast-reactor program and, further, accepted international safeguards, the basis for opposing it would disappear. Thus, the accumulation of bomb-grade plutonium could take place with all of the attendant risks of diversion, theft or, indeed, the renunciation of safeguards in the future.

The question seems to be whether the incremental economic value of developing plutonium-fueled reactors to succeed or supplement the existing low-enriched fueled reactors, which do not present proliferation concerns, is worth the risks involved.

It is interesting to note that the United States, as a matter of national policy, does not reprocess spent fuel from civilian reactors but stores the fuel indefinitely for eventual placement in a repository. Why, then, the

administration, with its otherwise strong non-proliferation policies, has condoned that start up of the British plant is not at all clear.

ROBERT N. SLAWSON
Annapolis

SAN JOSE MERCURY NEWS DEC 20 1993

Radioactive dust ^{6B}
ignores property lines

Your Dec. 15 editorial "Delayed fallout" was informative and long needed. It dealt with the Energy Department's "revelations" concerning dangerous and unethical nuclear weapons tests.

However, your commentary inadvertently hews to the old Government line in the statement that "Some tests released radioactivity into the atmosphere, although probably not off of the remote Nevada test site."

Impossible. Radioactive dust, like any dust, does not respect U.S. Government property lines or chain link fences any more than scorpions and rattlesnakes do. Neither do radioactive gases. The wind blows where it will blow.

The Department of Energy still conducts underground nuclear weapons tests. It is no surprise that even a set of "revelations" subtly includes the same old disclaimer, that the tests in Nevada do no harm. Utah ranchers have

had reason to contest that disclaimer for a long time.

— Nicholas Rosen
San Jose

Team fed radiation to moms

1940s tests resulted in death of 3 children

NASHVILLE, Tenn. (AP) - Researchers at Vanderbilt University gave radioactive pills to pregnant women during the 1940s to determine the long-term effects of radiation on children.

A follow-up study during the 1960s concluded that three children born to women who took the pills likely died because of the research. The study was partly funded by the U.S. Atomic Energy Commission.

The Department of Energy is looking for information on the experiments at Vanderbilt or other radiation research performed on civilians during the Cold War.

Vanderbilt officials said researchers kept documents of the study until they were destroyed in the 1970s.

Researchers gave radioactive pills to 751 pregnant women seeking free care at a prenatal clinic run by Vanderbilt University.

The pills exposed the women and their fetuses to radiation 30 times higher than normal. The doses given were not considered unsafe at the time.

A follow-up study in the 1960s concluded that three children likely died, including an 11-year-old girl who died of a tumor, an 11-year-old boy who died of cancer and a 5-year-old boy who died of lymphatic leukemia.

Vanderbilt officials said they don't know if the women were told of the possible effects of radiation or even if they knew they were being given radioactive pills.

The only data researchers had on the subject in the 1940s came from pregnant women who survived the atomic bombing of the Japanese cities Hiroshima and Nagasaki during World War II.

HOUSTON CHRONICLE

DEC 19 1993

'You can't fathom this'

Woman learns father injected with plutonium in 1940s

By GRACIE STAPLES
Fort Worth Star-Telegram

D7

DALLAS — More than two years have passed since Elmer Allen died, and it has taken his daughter, Elmerine Whitfield, that long to cry.

She did it for the first time two weeks ago when, she said, the reason for her father's alcoholic binges and crazy babblings became clear. He had been "used as a guinea pig" in a secret government experiment in which he and 17 other people were injected with plutonium.

"I can't tell him now that I understand," Whitfield said.

Whitfield, a Dallas schoolteacher, recalled life with her father in Italy, a small town south of Dallas, where everyone knows everyone and "everybody thought (Elmer Allen) was crazy."

Last month, an Albuquerque, N.M., newspaper reported that Allen, an amputee who had been diagnosed as a paranoid schizophrenic after claiming he had been involved in a government experiment, was telling the truth. He had been a railroad porter before his leg was amputated.

Whitfield has been able to get some of the records concerning her father, but she wants all of them.

At her request, Reps. Martin Frost, D-Dallas, and Eddie Bernice Johnson, D-Dallas, have asked the Energy Department to release Allen's medical records to his family.

Frost said that his staff is looking at the possibility of drafting legislation so that the victims' families will be compensated.

Energy Secretary Hazel O'Leary has directed that as much information as possible be released on those involved in the plutonium experiment, which only recently came to light, as well as on about 800 other people involved in different types of radiation tests.

"I think what the government did was outrageous," Frost said. "This is the type of thing you hear about the Russians doing, not the U.S. government."



Frost

Allen, who died at age 80 on June 30, 1991, was injected with plutonium during the 1940s as part of a secret government experiment to try to determine how much of the radioactive element a person had encountered.

Allen was injected on July 18, 1947, in San Francisco, three days before his leg was amputated for what doctors described as pre-existing bone cancer.



Johnson

Plutonium is a highly radioactive element that is the key ingredient in an atomic bomb. Scientists say exposure to plutonium can potentially cause cancer and possibly lead to chromosomal instability that could

affect future generations.

None of the patients involved was told the nature of the experiment.

Whitfield said that even if her father had been told, he wouldn't have understood. She said that her family did not know of the experiment until the newspaper contacted them a year ago.

"You can't fathom this," she said. "I think it's the most heinous thing that has been done to anyone in the United States of America. It sounds like a movie."

Whitfield said she blames the government for everything her family has endured.

"They took his manhood away," she said. "Everybody thought that my father was a crazy man."

Whitfield said she doesn't know what she will do with the documents tracking her father, but she said: "I want everybody to know what they did to him."

THE OREGONIAN
Portland, OR

DEC 19 1993

Hanford mishap leads to tests on inmates

Hanford: Data on radiation exposure lacking

■ The energy department makes public the 1962 accident and following radiation experiments on Northwest prisoners

By JAMES LONG

of The Oregonian staff

A serious radiation accident at Hanford led the federal government to pay 131 Oregon and Washington inmates \$5 a month to have their testes beamed with X-rays, a leader of the project said Friday.

The experiments began in 1963, but they remained a secret until the news media learned of them in 1973 while inquiring into other research at the prisons.

The reasons behind the experiments did not become clear until last week when U.S. Secretary of Energy Hazel O'Leary began declassifying information about the agency's past sponsorship of controversial human studies.

O'Leary said she would continue to open files until the energy department's past is thoroughly known.

Dr. C. Alvin Paulsen, 68, now a retired professor of medicine at the University of Washington, told The Oregonian on Friday that he organized the Washington State Penitentiary prisoner study following a mishap that exposed several Hanford workers.

A sketchy record at the nuclear site describes the accident as an unplanned chain-reaction of plutonium inside a plant known as the Recuplex Facility on April 7, 1962.

The report says someone routed too much fissionable plutonium into a container during a cleanup cycle, causing the bomb material to "go critical" and spew out a load of potentially deadly neutrons and gamma rays.

The report describes a flash of blue light and a noise similar to an electric spark.

According to the report, four men were nearby and were exposed to radiation doses estimated at 110, 43, 19 and 1.4 rem. For perspective, chest X-rays are measured in fractions of a rem.

Ken Swinth, a health physicist at Battelle Northwest Laboratory at Hanford, wouldn't try to estimate how dangerous a 110-rem dose might have been, "because individuals vary so much."

But, Swinth said, "you'd probably start to see a biological effect. Minor blood effects."

A fatal radiation dose, he said, also varies with individuals but is in the 1,000- to 2,000-rem range.

Paulsen got involved with the accident victims as part of a medical team summoned to Hanford to lend assistance. His specialty was reproductive medicine.

"It was clear we needed more information," he said. "When I recognized there was no information in the literature to provide me a road map to tell these men what was going on, I wrote up an application (for a grant) and submitted it."

“

I want to live like a human, even if I'm a convict

39-year-old inmate

”

Paulsen studied 64 men at the Washington prison at Walla Walla and a colleague, Dr. Carl G. Heller, now deceased, studied 67 at Oregon State Penitentiary in Salem. Their funding was from the Atomic Energy Commission, a predecessor of the Department of Energy.

In the Oregon experiments, which lasted from 1963 until 1971, prisoners were paid \$5 a month to allow Heller and his staff to beam X-rays at their testes in doses between 8 and 600 rads. An X-ray rad is roughly equal to an X-ray rem.

Swinth said 600 rads, concentrated on a small part of the body and not the entire body, would not be an unusual "therapeutic" dose of X-ray as used in cancer treatment and the like.

In addition to the \$5 a month, prisoners received \$10 for each biopsy performed on their testes to study the effect of the X-rays on sperm development. They also got a \$100 bonus for completing the program.

High X-ray doses induced temporary sterility, but Paulsen said the prisoners recovered in a few years.

The inmates were required to have a vasectomy upon leaving the program to guard against transmitting damaged genetic material.

The Walla Walla project was similar, but didn't administer as strong a dose of X-rays as the one at Oregon State Penitentiary.

The Walla Walla prisoners only got up to 44 rads.

Paulsen acknowledged Friday that the project drew criticism and that some of it was because of a lack of long-term monitoring of the prisoners.

"The media has been saying these people should have been followed up," Paulsen said. "Well, you can't treat (the now ex-prisoners) like a bunch of animals and follow them around. They didn't want to be followed."

What was learned from the experiments?

"We found out that the human testis was as sensitive as the mouse testis," Paulsen said. "That may sound silly, but there was some myth about how sensitive the testis was. It took longer to recover than other animal species, which again was not known. It wasn't earth-shaking," he added.

Paulsen's project was canceled in 1973 when he proposed irradiating the inmates' testes with neutrons.

The University of Washington, which administered Paulsen's grant, wouldn't allow it.

When the Oregon prison study came to light in 1973, a number of inmates who had participated in it were still there. Their feelings about the project varied.

A 39-year-old inmate who missed getting the money explained that the prison didn't buy glasses or false teeth, and that he couldn't even work in the paint shop, which paid 60 cents a day, because he'd broken his glasses.

"I want to live like a human, even if I'm a convict," he said.

Amarillo Daily News

(Circ: 43,321) DAY Sat DATE 12-18-93 PAGE 8A

Officials commit to declassify radioactive blast test data

LOS ALAMOS (AP) — Authorities say they're committed to declassifying as soon as possible data from radioactive clouds released over northern New Mexico more than 40 years ago.

The General Accounting Office, Congress' investigative arm, reported Wednesday test explosions were conducted in 1948-52 and that experimental measuring equipment was loaded onto a B-17 and tracked downwind from the Los Alamos blasts.

Los Alamos National Laboratory spokesman John Gustafson confirmed the report Thursday, but said radiation data from the flights remained classified. The U.S. Department of Energy is seeking to declassify the data, he said.

"If it's classified, we're committed to declassifying it as quickly as possible," DOE spokesman Sam Grizzle of Washington, D.C., said Thursday.

After the end of World War II, the government wanted to know more about how to protect America if the Soviet Union developed a radiation

weapon and considered building radiation weapons of its own.

A dozen secret tests were conducted in New Mexico, Tennessee and Utah — dropping radiation from the sky to see how fallout traveled and putting it on the ground to see how it spread, the GAO report said.

Investigators said four simulated nuclear explosions in New Mexico caused fallout tracked 10 miles in one case, 70 miles in another and unknown distances the other two times.

The GAO said radiation was intentionally released into the environment during the tests.

Gustafson said the purpose of the tests was to study the non-nuclear explosives used to ignite a nuclear blast, and radioactive chemicals were added to help study the explosions.

He said the experiments were done only when winds did not blow toward populated areas.

However, Herman Agoyo, president of Eight Northern Indian Pueblo Coalition in northern New Mexico, has said about 1,000 Indians probably lived in the area when the radiation was released in 1950.

ST. LOUIS POST DISPATCH

DEC 1 8 1993

Exposing Nuclear Experiments

Department Of Energy Launches Effort To Examine Three Decades Of Records

By Keith Schneider

• 1993, New York Times News Service

NEW YORK

FOR THREE DECADES after World War II, top medical scientists in the nation's nuclear weapons industry undertook an extensive program of experiments in which civilians were exposed to radiation in concentrations far above what is considered safe today.

The experiments, at government laboratories and prominent medical research institutions, involved injecting patients with dangerous radioactive substances such as plutonium or exposing them to powerful beams of radiation. Energy Department officials say many patients did not know they were the subjects of experiments.

At the time that much of the research was undertaken, considerably less was known about the hazards of radiation. It was common in the 1950s, for instance, for shoe stores to use X-ray machines to fit customers.

In addition, the government's nuclear scientists, conducting their work as though atomic war were imminent,

placed a top priority on research to understand the effect of radiation on soldiers and civilians. And some doctors credit such research for early advances in the forms of nuclear medicine that now fight disease and save lives.

Although glimpses of this program have been made public in the past, most recently in a 1986 congressional investigation, the government fought efforts by journalists, private investigators and family members of the patients involved to make the full story known.

Now Energy Secretary Hazel O'Leary has vowed to shine a bright light into what her aides say is a dark corner of America's cold war legacy. Prompted by questions raised by The Albuquerque Tribune in a series of articles last month about one such experiment, O'Leary has ordered the most thorough investigation ever of her Department's biomedical research program.

“There is some question as to whether . . . experiments were conducted in compliance with federal laws.”

C.E. NEWTON Jr. in a 1983 memo

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BURRELLE'S

NewsExpress

PAGE 8 OF 10

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The department has hired six archivists to comb classified records at the National Archives for documents on human medical experimentation and other government nuclear research in which civilians were secretly exposed to potentially harmful levels of radiation. O'Leary has also increased the number of employees who review and declassify documents in her own department from three to six, and she has announced plans to train more people to do such work.

In an interview, she said the investigation was motivated by "an obligation to put the public's mind at rest and expose things that need exposing."

There is broad support among those concerned with such issues, in and out of government, for her initiative, which, if successful, would help improve the department's image as officials work to resolve huge conflicts over dismantling the nation's nuclear arsenal and cleaning up its weapons complex.

Two of the experiments under review by the department ended in the early 1970s and involved exposing the testicles of more than 100 healthy prison inmates in Oregon and Washington state to very high levels of radiation from X-ray machines.

Documents show that the prisoners were paid small sums and were required to sign consent forms in order to take part.

Robert Alvarez, a special assistant in the Office of Policy Planning and Program Evaluation — and one of the many influential critics of the Energy Department who now work for O'Leary — said the consent forms had not fully explained the risks of the experiment, especially the risk of developing testicular cancer. No follow-up studies were conducted on the men who participated, he said.

"These prisoner studies were clearly unethical," Alvarez said.

But Dr. C. Alvin Paulsen, a retired professor of medicine at the University of Washington School of Medicine who helped conduct the experiments in that state, defended the study. He said he had kept audio recordings of interviews with inmates that show they were well informed about the intent of the research and the risks, including cancer.

"The question we asked was: 'What was the minimal effect of radiation that would interfere with the development of sperm,'" said Paulsen, who is now 69 and lives in Seattle. "And given that there might be some decrease in sperm production, would there be full recovery?"

"At that time, the start of the nuclear era, we felt it wouldn't be ethical to expose someone to radiation if we couldn't follow them up. Prisoners provided an opportunity for us to follow these gentlemen for four and five years."

We demonstrated that there was recovery of sperm and we couldn't have done that in the open, mobile population."

He said that even today "there is no evidence that irradiation induces testicular cancer."

But at least one research manager found some of the human experiments so alarming that he warned his colleagues. In a memorandum on Dec. 12, 1963, C.E. Newton Jr., a research manager at the Hanford nuclear weapons plant, warned, "The experiments do not appear to have been in compliance with the criminal codes of the state of Washington, and there is some question as to whether or not the experiments were conducted in compliance with federal laws."

When asked about this memorandum, a contractor who retains the relevant records said he did not have records of the experiments to which the memo referred.

Other experiments at the Oak Ridge National Laboratory in Tennessee exposed fa-

Nearly 200 patients, including a 6-year-old boy, were made subjects of one set of experiments.

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LANL radioactive cloud tests confirmed

By STEPHEN T. SHANKLAND
Monitor Staff Writer

Los Alamos National Laboratory, after scrambling to uncover documentation, has found evidence that it did in fact conduct fallout tracking tests in 1950.

A Health Division report from 1950 said that LANL researchers "participated ... with the Air Force Cambridge Research Laboratory in a limited cloud-tracking operation" in Bayo Canyon.

The radioactive cloud tracking operation also is mentioned in a 1982 environmental analysis of Bayo Canyon and in Health Division progress reports. LANL archivists uncovered the documents Thursday.

A progress report said the Air Force helped to carry out "an aerial survey of the fallout area following Bayo Canyon operations."

The fallout tracking experiments are described in a General Accounting Office

report released Wednesday. The report said at least four tests occurred in Los Alamos in 1950 that were for the purpose of tracking the radiation.

The report said that in one test, radiation traveled at least 70 miles east to Watrous, N.M., and in another test, traveled north for at least 10 miles.

The Bayo Canyon site, the now-dismantled Technical Area-10, was located just to the east of the ends of North Mesa and Barranca Mesa.

The explosions were part of remotely-triggered above-ground tests of the high-explosive triggers to nuclear weapons. LANL spokesman John Gustafson said.

In each shot, several hundred to several hundred thousand curies of radioactive lanthanum-140 was added to explosive test assemblies, the 1982 Bayo Canyon environmental analysis said.

The lanthanum-140 was used in the testing

of the explosives, Gustafson said. Lanthanum-140 has a short half-life of 41 hours, so it decays away within a matter of days.

The 1982 environmental report said that the lanthanum was contaminated by "an unavoidable proportion" of radioactive strontium-90 in the lanthanum purification process. The strontium-90, which has 28-year half-life, still can be detected in Bay Canyon.

None of the radiation today poses a health threat, Gustafson said.

"Standard procedures required a south westerly wind at the time of detonation; however, routine postshot surveys out to about five miles did at times find lanthanum-140 contamination in the vicinity of State Road (now N.M. 502) and on Otowi and Kwa Mesas," the environmental report said. "On one occasion, an aircraft was able to track a borne lanthanum-140 eastward across the

Rio Grande Valley."

Radioactive debris from the explosion also was scattered around the site, the environmental report said. This solid debris included "fragments of uranium and other metal components," mostly within 125 meters of the site, but some as far away as 600 meters.

Before the Bayo Canyon site was transferred to Los Alamos County in 1967, LANL officials used Jemez and Zia Pueblo Indians to clean up the area, said a 1963 letter from then LANL Director Norris Bradbury to the head of the Los Alamos office of the Atomic Energy Commission (the predecessor of the Department of Energy).

"At one period a crew of over 25 Indians from Zia and Jemez Pueblos was used in a sort of scavenger hunt. They crossed and crisscrossed the area, picking up all exposed objects which they could find, which surprisingly enough amounted to a total of 90 dump truck loads of trash," the letter said.

"Most of the (cleanup) work was done by Zia workmen with supervision from the laboratory's Engineering Department and from the Health Physics and Safety groups of the Health Division," the letter said. Zia Co. was the lab's maintenance contractor at the time.

The waste was cleaned up within a radius of 760 meters of the shot sites, the environmental report said. The debris was removed to Technical Area 54, LANL's contaminated waste disposal facility.

The letter concludes, "The passing of TA-10 into history leaves many of us with mixed emotions. The work done in that area made a very real contribution to the laboratory's weapons program, while at the same time posing many problems of health and safety. I feel, however, that we can return it to the AEC in its present condition with a perfectly clear conscience."

Pathologist: Radiation caused cancers

Doctor testifies for Test Site workers

By Mary Manning
LAS VEGAS SUN

A former Las Vegas pathologist has testified that three of the six Nevada Test Site workers who claim radiation caused their cancers developed the diseases much earlier in their lives than would be expected.

Dr. John Grayson said Thursday in the third day of a trial in U.S. District Court in Las Vegas that the workers developed their cancers as a result of nuclear weapons radiation exposure on the job at the Test Site.

Keith Prescott, Calvin Tuck and Harry Giesler developed their cancers 10 to 15 years before most people who develop the disease do, he said.

"Not only did they receive some degree of radiation, they received much more than was anticipated in their occupations," Grayson said, explaining the nature of the diseases in Test Site workers who are suing the federal government.

After government attorneys forced Dr. Karl Morgan, the scientist who invented health

physics, to admit on Wednesday that he supported human radiation experiments in the 1950s, Test Site worker attorney Larry Johns spent the day helping Grayson define medical problems from such exposure.

Prescott, 68, who was the first to file a lawsuit against the government 14 years ago, developed multiple myeloma in 1969 at the age of 43.

"Here is another one of the younger tumor people in a disease that normally affects older people," Grayson said, noting that multiple myeloma is common after radiation exposure.

Prescott is the only worker still alive. Others included in the case are Joe Carter, Hugh Mosley and Eugene Haynes.

"All of this radiation stuff

came with invisible ink that says if you get near, you're going to die," Grayson told U.S. District Judge Philip Pro, who is hearing the case that could last for months.

Truck driver Calvin Tuck learned about his cancer when he was 45. Through his years working as a truck driver, vendor and meat cutter, there was no reason for cancer to invade his pancreas, Grayson said, except radiation exposure.

According to government records, Tuck was exposed to radiation at the Test Site in 1962, 1963, 1964, 1966, 1967, 1968, 1969 and 1970.

He died April 3, 1974, at the age of 47 in a veteran's hospital in Salt Lake City. Normally, Grayson said, most men who develop this type of the disease do so at age 69.

Giesler died of bladder cancer in 1976 after working as a miner for government contractor Reynolds Electrical & Engineering Company. He worked in contaminated E tunnel and was exposed to radioactive tritium externally and internally.

The tunnel was closed after it became too contaminated by radiation, court records said.

"He was 50 years old, 15 years younger than the peak incidence of the tumor," Grayson said.

The Test Site workers also expanded the case by reviewing the exposure of Oral Epley, who with Joe Carter, recovered radioactive monitors after nuclear tests.

Epley collapsed and died of a brain hemorrhage on March 1, 1956. With Carter, Epley participated in "Project 56," an experiment involving high levels of plutonium.

Carter died of a brain tumor Aug. 8, 1980.



Testing Radiation on Humans

Radiation studies under review by the Energy Department

Location(s)	Date	People affected	Experiment
Vanderbilt University, Nashville	Late 1940's	About 800 pregnant women	Subjects were studied to determine the effect of radioactive iron on fetal development. A follow-up study of children born to the women found a higher-than-normal cancer rate.
Oak Ridge National Laboratory, Oak Ridge, Tenn.	Mid-1970's	Nearly 200 patients with leukemia and other cancers	They were exposed to high levels of radiation. The experiments ended after a 1974 Government memorandum, later uncovered by Mother Jones magazine, said the study had done little to benefit the patients.
University of Rochester, Oak Ridge Laboratory, University of Chicago, and the University of California Hospital in San Francisco	1945-1947	18 people	Subjects were injected with high concentrations of plutonium, apparently without their informed consent. Many patients were chosen because medical specialists believed they suffered life-threatening illnesses. Last month, The Albuquerque Tribune identified five of the subjects.
Oregon State Prison	1963-1971	67 inmates	Prisoners' testicles were exposed to X-rays to help researchers understand the effects of radiation on production and function of sperm. The inmates signed consent statements indicating that they were aware of some of the risks, but the statements did not mention that radiation could cause cancer.
Washington State Prison	1963-1970	64 inmates	A similar study, begun after an accident at the Hanford nuclear site exposed three prisoners to high levels of radiation. The purpose was to determine the minimum dose that would cause healthy men to become temporarily sterile.
Columbia University and Montefiore Hospital in the Bronx	Late 1950's	12 terminally ill cancer patients	Subjects were injected with concentrations of radioactive calcium and strontium-85, another radioactive substance, to measure the rate at which radioactive substances were absorbed into various human tissues.

Sources: The Department of Energy, The Atomic Energy Commission, Congress, The Albuquerque Tribune, The Government Accountability Project, Mother Jones Magazine.

Secret Nuclear Research on People Comes to Light

By KEITH SCHNEIDER **A1**

For three decades after World War II, top medical scientists in the nation's nuclear weapons industry undertook an extensive program of experiments in which civilians were exposed to radiation in concentrations far above what is considered safe today.

The experiments, at Government laboratories and prominent medical research institutions, involved injecting patients with dangerous radioactive substances like plutonium or exposing them to powerful beams of radiation.

Now the Energy Department is doing an about-face, acknowledging that for the last six years it has ignored evidence of abuses and a Congressional request to uncover the full extent of the experimentation and compensate subjects.

Energy Secretary Hazel R. O'Leary has promised a full investigation, much of it focusing on whether civilians were fully informed of the risks and consented to take part in the experiments. Mrs. O'Leary said it was clear in several cases she had personally reviewed that subjects had not been fully informed. But she and several of her aides also said it was just as clear that other experiments had been conducted in accord with medical and ethical standards of the time.

During the years when much of the research was undertaken, considerably less was known about the hazards of radiation. It was common in the 1950's, for instance, for shoe stores to use X-ray machines to fit customers.

The Government's nuclear scientists, conducting their work as though atomic war were imminent, placed a top priority on research to determine the affect of radiation on soldiers and civilians. And such research clearly advanced nuclear medicine to fight disease and save lives.

Although there have been glimpses of these experiments in the past, most recently in a 1986 Congressional investigation, the Government has long fought efforts by journalists, private investigators and the families of patients to make the full story known.

Now Mrs. O'Leary has vowed to shine a bright light into what her aides say is a dark corner of America's cold war legacy. Prompted by a series of articles last month in *The Albuquerque Tribune* about one such experiment, Mrs. O'Leary has ordered the most thorough investigation ever of her De-

partment's biomedical experiments.

The investigation will be part of a larger effort by the Energy Department to declassify millions of pages of secret documents on past activities of the nuclear weapons industry. As part of that effort, the Department has hired six archivists to comb classified records at the National Archives. Mrs. O'Leary has also increased the number of employees in her own department who review and declassify documents from three to six, and she has announced plans to train more people to do such work.

In an interview, Mrs. O'Leary said the investigation was motivated by a "an obligation to put the public's mind at rest and expose things that need exposing."

Her initiative, if successful, would help improve the department's image as officials work to resolve huge conflicts over dismantling the nation's nuclear arsenal and cleaning up its weapons plants.

Prisoners Subjected to X-rays

Two of the experiments under review by the department ended in the early 1970's and involved exposing the testicles of more than 100 healthy state prison inmates in Oregon and Washington to very high levels of radiation from X-ray machines. Documents show that the prisoners were paid small sums to participate and were required to sign consent forms in order to take part.

But Robert Alvarez, a special assistant in the Office of Policy Planning and Program Evaluation — and one of the many influential critics of the Energy Department who now work for Mrs. O'Leary — said the consent forms had not fully explained the risks of the experiment, especially the risk of developing testicular cancer. He added that no follow-up studies were conducted on the men who participated.

"These prisoner studies were clearly unethical," Mr. Alvarez said.

But the study was defended by Dr. C. Alvin Paulsen, a retired professor of medicine at the University of Washington School of Medicine who helped conduct the experiments in that state. He said he had kept audio recordings of interviews with inmates that showed they had been well informed about the intent of the research and the possible risks, including cancer.

Needed a Restricted Population

"The question we asked was: What was the minimal effect of radiation that would interfere with the development of sperm?" said Dr. Paulsen, who is now 69 and lives in Seattle. "And given that there might be some decrease in sperm production, would there be full recovery?"

"At that time, the start of the nuclear era, we felt it wouldn't be ethical to expose someone to radiation if we couldn't follow them up. Prisoners provided an opportunity for us to follow these gentlemen for four and five years. We demonstrated that there was recovery of sperm, and we couldn't have done that in the open, mobile population."

He said that even today "there is no evidence that irradiation induces testicular cancer."

But at least one research manager found some of the human experiments so alarming that he warned his colleagues. In a memorandum on Dec. 12, 1963, C. E. Newton Jr., a research manager at the Hanford nuclear weapons plant, warned, "The experiments do not appear to have been in compliance with the criminal codes of the state of Washington, and there is some question as to whether or not the experiments were conducted in compliance with Federal laws."

When asked about this memorandum, a contractor who retains the relevant records said he did not have records of the experiments to which the memo referred.

Other experiments, at the Oak Ridge National Laboratory in Tennessee, exposed patients with leukemia and other cancers to exceptionally high levels of radiation from cesium and cobalt isotopes. Nearly 200 patients, including a 6-year-old boy, were made subjects of the experiments before the Atomic Energy Commission called a halt to them in 1974, saying they had done little to benefit the patients.

Openness Is Applauded

There is no central repository for records on these or other medical research programs, said Dr. Tara O'Toole, the Assistant Secretary of Energy for Environment, Health and Safety, who will be heading the investigation. The records are stored at atomic laboratories, private medical schools and research centers across the country. Among the universities that will be searching for documents are the University of Chicago, the Massachusetts Institute of Technology, the University of Rochester, the University of California system, the University of Washington and Vanderbilt University.

Mrs. O'Leary's interest in such a potentially explosive subject has drawn applause from some of the Department's foremost critics. Tom Carpenter, a Seattle lawyer with the Government Accountability Project, a legal group that represents Energy Department whistle-blowers, said: "She sees this as part of the process of disclosure that is necessary to rebuild public trust in the agency."

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"She's surrounded herself with advisers who were members of the public interest community, and they have told her this kind of stuff needs to get out."

Even so, the Energy Department said it faced legal barriers to disclosing information in its files, especially in complying with laws protecting the privacy of patients or their families.

Just how slow and cumbersome disclosure can become was graphically illustrated over the last six months as the Energy Department sought files from the Argonne National Laboratory outside Chicago on human experiments involving plutonium.

One experiment, conducted from 1945 to 1947, involved injecting 18 patients with plutonium, a dangerous radioactive material developed for use in atomic bombs. The Albuquerque Tribune tracked the stories of five patients, including Eda Schultz Charlton, who was injected without her knowledge in a Rochester hospital in 1945. Apparently not seriously ill at the time, she lived until 1983, when she died at age 85.

Eileen Welsome, a reporter at The Tribune, filed a request under the Freedom of Information Act that the Energy Department make public all its documents relating to the experiment, including the names of people who were injected. In May, Energy Department officials asked Argonne to send the files to headquarters in Washington so they could be made public.

Privacy Issue Looms

But in the last six months, Argonne has sent only a few documents to the Department. Harry Conner, an Argonne spokesman, said lawyers for the University of Chicago, which manages the laboratory, were concerned that disclosing the identities of the people who were injected, all of whom have died, could violate the privacy of family members.

Last week, the University of Chicago agreed to release hundreds of pages of documents but only after officials there were persuaded that the department was sensitive to the privacy issues, Mr. Conner said.

Marc Johnston, an Energy Department lawyer in Washington, said he was expecting the files to arrive over the next few weeks. Before they are made public, the department will review them and remove all names and any other information that could identify the participants, a process that could take weeks more, Mr. Johnston said.

Mrs. O'Leary and Dr. O'Toole said such steps were necessary. The investigation into human experimentation is likely to uncover information that surviving participants, members of their families, and the public will find quite disturbing. "Does the public's right to know include releasing names," Dr. O'Toole asked. "It's not clear to me

that is part of the ethical obligation of the Government."

Administrators at some of the research hospitals and universities involved have said they are worried that unless the Energy Department is careful in how it releases the information, the reputations of their institutions could be harmed. Mrs. O'Leary has appointed a medical ethicist from Johns Hopkins University to help guide the department.

Robert Loeb, the director of public information at Strong Memorial Hospital at the University of Rochester, where some of the studies were conducted, said: "In the 1940's, what was typical in research involving human subjects was for physicians to tell the patients that they would be involved in a study and not always give full details. That is not the standard today. Many of these studies would be impossible to conduct today."

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Energy Department Responds To Revelations Of Radiation Releases

By KATHERINE RIZZO

Associated Press Writer

WASHINGTON (AP) - The Energy Department has promised to find and declassify evidence of a dozen top-secret radiation experiments conducted over New Mexico, Tennessee and Utah after World War II.

The experiments were part of Cold War research intended to help defend the United States if the former Soviet Union developed a radiation weapon, and perhaps build such a weapon for this country. In the tests, the government deliberately put radiation into the air.

The experiments conducted from 1948-1952 became public Wednesday when Sen. John Glenn, D-Ohio, released an unclassified version of a report on the tests by the General Accounting Office, the investigative arm of Congress.

Energy Department spokesman Sam Grizzle said the department was trying to find out what classified material the GAO found.

"We're researching the source documents and will make every attempt to get them declassified as soon as possible," Grizzle said.

Glenn and some watchdog groups urged the department to move fast.

"It's very disturbing that information of this magnitude is still being kept from people," said Daryl Kimball of Physicians for Social Responsibility, a group that for years has been seeking more information from on nuclear testing.

"We need to end the cover-up of this kind of experimentation," he said.

The GAO report did not evaluate the potential health effects of the radiation dropped from planes or placed on the ground. Investigators could not find enough details, Glenn said.

"I do not believe that it is currently possible to determine whether civilians or workers were unwittingly exposed to health-damaging doses of radiation, or if there was significant impact on the environment," he said.

The GAO said radiation bombs dropped at an Army site in Dugway, Utah, spread a short distance but 50 percent farther than expected.

In another experiment, 60 times more radiation than escaped from the Three Mile Island nuclear plant in 1979 was deliberately put on the ground at the Atomic Energy Commission's office in Oak Ridge, Tenn.

And simulated nuclear explosions at Los Alamos, N.M., caused clouds of fallout tracked 10 miles in one case, 70 miles in another, unknown distances two other times, the GAO said.

John Gustafson, a spokesman for Los Alamos National Laboratory, said the government set off explosions in a canyon using small amounts of radioactive material 1950, but those were to test the explosives process - not to track fallout.

The GAO said experimental measuring equipment was loaded onto a B-17 and tracked downwind from the Los Alamos explosions.

"If there was tracking with a B-17, nobody knows about it" at Los Alamos, Gustafson said.

The GAO said it didn't know whether the New Mexico tests, conducted in 1950, exposed any researchers, pilots or civilians.

Eight of the tests were part of an attempt to design a weapon that could spread radiation around a limited, tightly controlled area. Such devices were tested through 1952 and the research appears to have ended in 1954, the report said.

From 1949-52, the AEC, Army Chemical Corps and Air Force made six tests of radiation-spreading devices in Utah. Radioactive particles were loaded onto cluster devices then dropped from about 15,000 feet.

At the Oak Ridge, Tenn. office of the AEC, radiation was twice emitted at or near ground level in 1948. One test involved radiation 1,000 curies in strength, the other, 300 curies, the report said.

In comparison, the 43-day emergency at Three Mile Island emitted no more than 15 curies, according to the Nuclear Regulatory Commission. A curie is a unit of radiation.

[Energy]

U.S. released radiation as arms test, Glenn says

Los Angeles Times

Washington, D.C.

The U.S. government deliberately dropped radioactive material from planes or released it on the ground in a dozen experiments after World War II, Sen. John Glenn, D-Ohio, revealed Wednesday.

Eight of the tests occurred in Tennessee and Utah in an effort to create a battlefield radiation weapon. In four instances, radiation was released into the air in New Mexico so pilots could chase the cloud of fallout to plot its movements.

In at least four of those 12 experiments, radiation spread beyond the planned boundaries of the test. All of the tests were conducted between 1948 and 1952.

"The Cold War frenzy which gripped our nation immediately after World War II created a climate where tests such as these were deemed necessary. Twenty-twenty hindsight gives us a much different view," Glenn said in a General Accounting Office report.

Glenn, as chairman of the Senate Governmental Affairs Committee, has conducted hearings on U.S. nuclear testing. The GAO investigation was triggered by revelations in 1989 of experiments that spread radiation over a 200-mile stretch of Oregon and Washington state in 1949.

Investigators reported that, in two tests designed to demonstrate how radioactivity clouds disperse, radiation bombs were dropped from planes over Los Alamos, N.M. The

release created radioactive clouds tracked 10 miles in one case, 70 miles in another.

In two other similar tests the distance traveled by the clouds is unknown.

At Dugway Proving Grounds in Utah, radiation bombs dropped at an Army site spread 50 percent farther than expected, although the distance amounted only to 0.06 of a square mile.

In 1949, the Army dropped cluster bombs containing radiation particles reaching 1,500 curies from a plane flying at 15,000 feet. That level of radiation could cause death in those exposed at extremely close range in about an hour.

The 43-day emergency at Three Mile Island in Pennsylvania emitted no more than 15 curies, according to the Nuclear Regulatory Commission. But all of those tests described by the GAO used radioactive sources that emitted radioactive levels of anywhere from 300 to 1,500 curies.

Experts said that generally the radioactivity achieved in the tests would have dispersed relatively quickly and added that no radioactive residue would remain in those areas today.

The disclosure was made a week after Energy Secretary Hazel O'Leary promised to create a new atmosphere of openness about such Cold War nuclear matters and released details of human experiments involving plutonium.

Feds ignored nuclear risk at 56 sites, watchdogs say

By Scott Bronstein
STAFF WRITER

A8

Inspections by federal regulators at the nation's nuclear plants have failed to identify key safety problems or have downplayed them, according to Ralph Nader's watchdog group, Public Citizen.

The interest group on Wednesday released a study, using previously secret documents, to show what they characterized as the "darker" side of nuclear power and its safety.

Inspection reports from plants across the country were analyzed, including those from 13 in the South, including Plants Hatch and Vogtle in Georgia.

At many plants, potential problem areas identified by an Atlanta-based industry group were later ignored or downplayed by federal regulators from the Nuclear Regulatory Commission, who reviewed the industry reports.

"This shows that the NRC is more concerned with shielding the industry it's supposed to be regulating than they are about protecting the public," said Jim Riccio, co-author of the watchdog report.

In reports from the past three years on 56 reactor sites, there were 463 specific findings identified by the Atlanta-based Institute of Nuclear Power Operations (INPO), according to Public Citizen.

But in the NRC's reports on the same plants for roughly the same time, only about a third, or 163 findings, were mentioned. About 185 of the INPO findings went completely unaddressed, and another 115 findings were contradicted in the NRC reports.

INPO, an industry organization, was formed about 15 years ago to help provide better inspection information to the NRC in the wake of the Three Mile Island accident near Harrisburg, Pa. All operating U.S. nuclear plants are members of INPO.

"The American people have a right to know about the condition of nuclear reactors," said Public Citizen President Joan Claybrook.

Joseph Fouchard, a spokesman for the NRC in Bethesda, Md., did not dispute the documents but said the interpretation by Public Citizen is dead wrong.

"Public safety is certainly being protected. It's not jeopardized in any way," Fouchard said.

U.S. exposed citizens to radiation in 1950s tests, report says

Fallout was loosed in eight incidents

Knight-Ridder News Service

GA

WASHINGTON — The U.S. government exposed an untold number of Americans to radioactive fallout during a dozen secret weapons tests from 1948 to 1952, according to a report released yesterday.

The tests were kept secret for more than 40 years until the General

Accounting Office, Congress' investigative arm, had the information declassified at the request of Sen. John Glenn, an Ohio Democrat.

"The Cold War frenzy which gripped the nation immediately after World War II created a climate where tests such as these were deemed necessary," Mr. Glenn said. "20/20 hindsight gives us a much different view. There is no justification for the government to keep this information secret."

Last week, Energy Secretary Hazel O'Leary announced her intention

to lift the secrecy that has shrouded nuclear weapons testing during the Cold War. She released information showing that 204 nuclear weapons tests had been conducted and that plutonium had been injected into 18 civilians during experiments in the 1940s.

Eight deliberate releases of radiation — two in Oak Ridge, Tenn., and six in Dugway, Utah — were part of an effort to develop a radioactive weapon, the GAO reported.

Four other tests were conducted in Los Alamos, N.M., to track the fallout after simulated nuclear devices were exploded. One radioactive cloud was tracked 70 miles east of Los Alamos. A second was found 10 miles to the north.

Workers at the sites undoubtedly were exposed to the releases, but without more detailed records, it's not possible to tell how many people were exposed or at what levels, said Arjun Makhijani, president of the Institute for Energy and Environmental Research in Takoma Park.

"This is the first step," said Mr. Makhijani, an electrical engineer specializing in nuclear fusion. "The Department of Energy and the military owe the American people a thorough and independent evaluation."

The GAO report represents the strongest evidence so far that the government was building a systematic radioactive warfare program in the 1940s, he said.

The new disclosures follow revelations in 1989 of experiments done in Hanford, Wash., that spread radiation over large areas of Washington and Oregon.

Doctor aiding radiation victims admits advocating past testing

By Warren Bates
Review-Journal

A health physicist who testified earlier this week on behalf of families suing the government in a radiation sickness case grudgingly acknowledged Wednesday he has advocated radiation experiments on prisoners.

The comments by Dr. Karl Morgan came after a blistering afternoon of cross-examination in which he admitted participating in human experimentation. It was also brought up that, in the past, Morgan said the loss of human life is acceptable in the interests of national security.

Morgan's testimony was used by government attorneys in part to discredit him and to show that, at times, he has held views that agree with the defense contention that public policy can take precedence over radiation exposure safety guidelines.

On Monday, the former director of health physics at Oak Ridge National Laboratory in Tennessee testified that safety procedures at the Nevada Test Site were severely compromised in the mid-1950s during above-ground nuclear weapons testing.

The families of five deceased test site workers, and one former worker still alive, Keith Prescott, allege that their exposures to ionizing radiation caused their cancers. The case is being heard by U.S. District Judge Philip Pro and the trial, which began Monday, could last four months.

When Morgan was asked Wednesday by government attorney Ralph Johnson whether he had ever advocated radiation experiments on inmates serving life terms, Morgan replied he

did not remember "stepping to that level."

Johnson then read a 1955 article the doctor had written that said prisoners might consider their willingness to undergo such tests a form of restitution for their crimes. Should volunteers "expire," Morgan wrote, all efforts should be made to get autopsy data.

Johnson also asked Morgan if, at one time in the 1950s, he believed the work at the test site was so important to national defense that "it was worth some child dying of leukemia" or some workers suffering exposure to radiation.

"I was under the impression at the time that the saving of thousands of lives was worth considerable risks that I would never condone under other circumstances," Morgan responded. "Today I don't necessarily think the same as then."

Morgan, 86, also participated in experiments in which radioactive phosphorous discs were taped to the arms and breasts of women in 1943.

Unusually high amounts of radiation were distributed to test participants, but Morgan said he was acting at the direction of other doctors.

Radiation deliberately spread

□ Several states were affected by intentional contamination after World War II, a report discloses.

By Keith Rogers
Review-Journal

The government deliberately dropped radioactive material from planes or released it on the ground during a series of once-secret nuclear warfare experiments that spread contamination over several states, Sen. John Glenn said Wednesday.

The experiments — some aimed at developing cluster bombs to spread radiation and others for tracking radioactive clouds to study the effects of fallout — were in addition to 204 previously unannounced nuclear weapons tests and some 800 human experiments involving radioactive materials that the Department of Energy disclosed last week.

Glenn, D-Ohio and chairman of the Senate Governmental Affairs Committee, released a report by the General Accounting Office, the investigative arm of Congress, that described the fallout experiments and contamination that affected parts of New Mexico, Utah, Washington, Oregon and Tennessee.

The 19-page report twice mentioned the Nevada Test Site. In the first reference, the report says Air Force planes routinely monitored airborne radiation "in conjunction with the many nuclear bomb tests conducted at the Nevada Test Site and in the Pacific Ocean during the late 1940s and throughout the 1950s."

The second reference described "dirty" fallout effects that were first noticed during tests near Bikini atoll in 1946 and "were further studied through surface and cratering tests at the Nevada Test Site."

Specifically, those fallout tests were conducted in conjunction with operations Buster and Jangle in November 1951. The two Operation Buster tests

— Dog and Easy — are listed as weapons-related airdrop tests that produced yields of 21 kilotons and 31 kilotons, respectively, according to previously unclassified Department of Energy documents.

The two tests under Operation Jangle — Sugar and Uncle — are listed as weapons effects tests. Both produced yields of 1.2 kilotons, or about the same as the energy released from detonating 1,200 tons of TNT.

Dave Brack, a GAO evaluator and principal data gatherer for the report, said researchers did not come across any evidence of deliberate radioactive releases at the Nevada Test Site, but he noted the test site was not the focus of the report.

In all, 100 above-ground nuclear tests and five so-called safety tests, that involved dispersing plutonium, were conducted in Nevada from 1951 through 1963, according to a 1989 government assessment of nuclear testing.

That report, by the Office of Technology Assessment, says 12 billion curies, or units of radioactivity, were released during above-ground tests at the test site, 65 miles northwest of Las Vegas.

Releases from those announced, above-ground nuclear tests were large compared to 28,000 curies of radioactive material that the new GAO report says was put in the atmosphere over wide areas of Washington and Oregon during the Green Run fallout monitoring experiment on Dec. 2-3, 1949.

In the Green Run experiment, residuals from so-called "green" spent reactor fuel, which had been aged only 16 days instead of the normal 90-day period, was released from the Hanford defense reactor facility in Washington.

"While the release was con-

ducted on a weekend, which may have limited the number of workers on site, the off-site populace was not forewarned of the event or made aware of it for several days," the GAO report says.

Glenn said, "There is no justification for the government to keep this information secret and there is no justification, except in extreme wartime conditions, for the principle of informed consent to be abandoned."

The report documents 12 other planned radioactive releases. These occurred at Oak Ridge, Tenn., Los Alamos, N.M., and Dugway, Utah. Eight of the releases were linked to the Radiation Warfare Program.

At the site at Dugway, Utah, the Army Chemical Corps, the now-defunct Atomic Energy Commission and the Air Force conducted six tests from 1949 through 1952. Some of the tests involved loading radioactive particles — 300 curies of tantalum-182 — in a 2,000-pound cluster bomb that exploded 1,300 feet above the surface. Contamination was spread over 50 percent more area than anticipated, the GAO report says.

"Fallout from the March 24 and April 6 tests went off-site over sparsely populated areas. The cloud from the March 24 test was tracked as far as the small town of Watrous, N.M..

Concerning the government's nuclear testing activities in Nevada, Chris West, a Department of Energy spokesman in Las Vegas, said, "Radiation wasn't released for the sake of releasing radiation. Cloud tracking was a routine procedure that the Air Force conducted."

Donrey Washington Bureau writer Tony Ball and The Associated Press contributed to this report.

THE ALBUQUERQUE TRIBUNE



C1

Still the one

Some New Mexicans still back Ross Perot despite his NAFTA flop



Ice cometh
Snow or no?
Who really knows?

C16

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Memo: Human test illegal

■ An official's 1963 letter suggests experiments at the Hanford nuclear facility violated state and federal laws.

By KATHLEEN WELSHOME
staff reporter

Human experiments conducted years ago by researchers at the Hanford Nuclear Reservation appear to have been violating the criminal laws of the state



of Washington and possibly federal laws, a newly-surfaced record shows.

The possibility of criminal violations is raised in a memo entitled "Radiological Experiments on Human Test Subjects," written Dec. 12, 1963, by an official named C. E. Newton, Jr.,

the manager of composite dose studies and records at the nuclear facility.

"The experiments do not appear to have been in compliance with the criminal codes of the state of Washington and there is some question as to whether or not the experiments were conducted in compliance with federal laws," Newton states in a two-page memo addressed to A.R. Keene, manager of radiation protection. The memo was labeled "strictly private."

The memo then goes on to

RADIOACTIVE CLOUD OVER N.M.

The U.S. government deliberately dropped radioactive material from planes or released it on the ground in New Mexico and other states a dozen times after World War II. One radiation cloud was tracked 70 miles downwind from Los Alamos to Watrous. Please see story on Page A12.

discuss whether the experiments should be brought into compliance, or continued on an "unofficial" basis — without the endorsement of the Atomic Energy Commission.

"If it is decided to continue these unofficially it would be difficult and unwise to specify the official records requirements for undercover unofficial activities," the memo states.

The nature of the experiments are not described in the document, nor is there any information about the period of time in which the experiments were conducted.

Newton and Keene apparently were employees of Hanford Laboratories, but do not show up as current employees, said Jerry Holloway, manager of media relations at DOE's Pacific Northwest Laboratory, which in 1965 took over the operations of Hanford Laboratories.

Holloway acknowledged the
Please see HANFORDA12

THE DOCUMENT

December 12, 1963

STRICTLY PRIVATE
A.R. Kasse, Manager
RADIATION PROTECTION

Radiological experiments on human test subjects

Purpose
The purpose of this study was to review the radiological experiments on human test subjects, to make recommendations as to the propriety of continuing these studies and the record requirements on the personnel involved.

Findings
The records on the past experiments are inadequate. The experiments do not appear to have been in compliance with the criminal codes of the State of Washington and there is some question as to whether or not the experiments were conducted in compliance with federal laws.

Discussion
Experiments on human test subjects may be conducted either with or without having established formal compliance with federal and state laws. If it is desired to continue these experiments in compliance with all applicable laws and regulations, this study indicates that an official endorsement of such program testing should be specifically stated or received from the Atomic Energy Commission. Such an approach will involve some red tape and delay in obtaining the necessary approval. It could very well jeopardize continuance of such programs. Nevertheless it seems that if there isn't sufficient justification to warrant conducting these programs, then we shouldn't be doing them. If it is decided to continue these unofficially it would be difficult and unwise to specify the official records requirements for undercover unofficial activities.

Recommendations
1. Recommend that the gray area as to whether or not radiological experiments on human test subjects here at Hanford are in compliance with federal laws be clarified as soon as possible and in any event before further testing is done. Legal counsel can upon request secure from the Atomic Energy Commission an answer to the question as to the extent to which the AEC regards such programs as being within the scope of our prime contract. This will resolve compliance with federal laws.

2. Recommend that if such programs are not within the scope of our prime contract and such experiments are interpreted as in violation of either federal or state laws that such experiments cease.

3. Recommend that experiments conducted that comply with federal laws be undertaken only if they also comply with state laws. Implementation of the circumstances suggested by Professor David W. Lousiet, quoted by Jules Pearlman in the attached letter dated Nov. 21, 1963 and repeated here should give the required assurance.

4. The experiment enjoys the consensus of informed medical opinion as to its legitimacy and is not in violation of statutes.

5. The subject, a competent adult person, knowingly and voluntarily consents, after full explanation.

6. There has been adequate preparation by animal experiments.

7. Recommend that the strict control of all phases of the program emphasized as necessary by Mr. Pearlman be initiated by the implementation of the formal procedure attached as Appendix A, which also assures adoption of recommendation No. 3 above.

C.E. Newton, Jr., Manager
Composite dose studies & records

HANFORD

From

Group, in response to a Freedom of Information Act request. Some of the records were withheld under an exemption protecting attorney-client privilege. Tom Carpenter, a lawyer for the public interest group, based a copy of the documents to The Tribune on Tuesday.

"This just seems for an investigation," Carpenter said. "It's very probable crimes were committed and people were experimented on illegally." He said, "The fact that they're still hiding records from us under the guise of attorney-client privilege is, I think, an indicator of that."

Carpenter said he filed the Freedom of Information Act request after a Hanford worker two years ago brought him a copy of the memo and asked him to look into it.

"He (the worker) had been recruited to receive an injection of plutonium along with other workers. He had refused and was ultimately terminated, he thinks, because of that," Carpenter said.

Carpenter said he had no way to "judge the accuracy" of the employee's statements. He also said the worker does not want to be identified.

Some of the experiments conducted on human beings at Hanford were described in a congressional report released in late 1960 by U.S. Rep. Edward Markey, a Massachusetts congressman. But the Markey report doesn't mention the alleged injection of Hanford workers with plutonium.

WELLS-JURY, DECEMBER 13, 1963

Admission does little to ease radiation victim's anger

Associated Press

BOUNTIFUL, Utah - As a teen, Darlene Phillips lugged her father's camera lenses and tripods over southern Utah's sandstone vistas, occasionally rising early to watch the atomic bombs create false sunrise in the west.

"We were explorers. This was one more adventure," recalls Ms. Phillips, 60. "It was like the Fourth of July to watch that bomb go off."

But when the exploring was over, the deadly reality of the risks her family took sunk in. They're still sinking in, as more information about the nearly 50 years of atomic blasts at the Nevada Test Site upwind from southern Utah - trickles out of the U.S. Energy Department.

Though Phillips can't prove it, she believes she suffers from a rare immune disorder because of the fallout. And she's angry.

Last week, the department disclosed 204 previously secret tests, bringing to 1,051 the total above and below ground from 1945 to the present.

The dawning of Ms. Phillips' dread came in the late 1950s, when she was in her 20s, the mother of

five children and living in the Salt Lake area. Her hair started falling out in chunks, and she was perpetually exhausted, pale, shaking and dizzy.

Her husband's uncles, who had returned from a uranium prospecting trip in southern Utah dusted with radioactive fallout, died of leukemia and an undiagnosed blood disease.

Fallout was detected in a canyon near Salt Lake City, and warnings went out about radioactive iodine-tainted milk.

Ms. Phillips was among the first of the "downwinders" to put it all together - that Utah was stewing in radioactive fallout from open-air tests of atomic bombs.

"I was saying, 'I wonder if this is what is wrong?'" Ms. Phillips recalls.

After a lifetime of brushes with hepatitis, cancer and death, of living isolated from the public and at times from her own children because of a rare immune system disorder, she is convinced.

Ms. Phillips knows she was exposed to fallout during the many weekends, vacations, summers trailing her photographer father through southern Utah. She worked two summers at the Bryce Canyon soda fountain downwind from the blasts. And when she and Warren Phillips married, they spent every free weekend in the redrock country, pushing strollers over sandstone, camping in the radiation-dusted desert.

Now, she's angry that the government would take advantage of Cold War fears, when people were building bomb shelters in their backyards and eager to help the government. She's angry it would expose its own citizens and lie about the dangers.

"We somehow blitzed out of our minds that our bombs were every bit as dangerous," Ms. Phillips said. "If the Russians had dropped a bomb in Nevada, we all would have been in bomb shelters."

She's angry with Utah's conservative culture that welcomed the tests with patriotic fervor - a culture that naively followed suggestions to watch the supposedly harmless tests.

"As long you put a flag in front of it, we'd salute," Ms. Phillips said.

And, she's angry with herself. "I was part of 'us.' I was given a brain, but I didn't use it."

Ms. Phillips lauds the government's disclosure of secret tests because even late information is better than none. But she remains

skeptical about the motives. "They're willing to come clean now, because they've already limited the compensation," she said.

Congress passed a nuclear fallout victims compensation bill three years ago, which Ms. Phillips criticizes as applying to too narrow a group of victims. None

of her family members, including three sisters who have thyroid ailments, was included.

Though she was able to emerge from her disease-induced isolation in 1978 after National Institutes of Health researchers hit on a treatment regimen that works, she carries a great sadness.

More info sought on human nuclear experiments

By Mary Manning

LAS VEGAS SUN

Attorneys for six Nevada Test Site workers who claim nuclear weapons exposure caused their cancers have asked the Department of Energy to disclose the names of those involved in more than 800 human experiments with radiation.

Energy Secretary Hazel O'Leary said last week that in addition to 204 secret nuclear experiments at the Test Site, the government knew of 800 radioactive exposures to humans, including 18 people injected with plutonium.

In the first day of the trial of a lawsuit brought against the federal government by former Test Site workers, attorney Dale Haralson asked that O'Leary reveal immediately the names of the government scientists who conducted the experiments, saying they may be called as expert witnesses during the trial.

O'Leary said she would disclose further information on the human experiments by June, DOE spokesman Darwin Morgan said.

Federal attorneys also filed a motion asking U.S. District Judge Philip Pro to dismiss the workers' case because Nevada law does not allow dependants or heirs to collect benefits from an occupational disease.

Karl Morgan, considered the founder of health physics, testified most of Monday to safety procedures at the Test Site.

Morgan also was asked about his own participation in human experiments with radiation.

"While director of health physics at Oak Ridge (National Laboratory, Tennessee), did you become involved in any human experiments?" asked assistant U.S. attorney Ralph Johnson.

"No, I did not," said the 87-year-old Morgan.

Johnson then asked if Morgan taped radioactive phosphorous discs to his secretary's arms in 1943.

Morgan said that incident occurred because two medical doctors were curious about radiation exposure to human skin. They became frightened when women at the Oak Ridge laboratory began to notice reddened skin beneath the tape. Fearing ulcers, the discs were removed.

"That turned out to be a terrible experiment in terms of what we know today," Morgan said. "It would be unacceptable with what we know in 1993."

In case after case, Morgan reviewed documents from nuclear weapons tests in Nevada from 1951 through 1960.

During a nuclear test series, Eugene Haynes, one of the workers in the suit, received 39 rads, a measure of radiation 10 times the acceptable limit, on March 1, 1955.

Morgan said that from the reports written by Atomic

Energy Commission officials, no instructions to prevent exposure were given to the workers, no inspections were made to detect radiation and no roadblocks were set up to prevent an exposure such as Haynes received while entering an area after the shot "Tesla."

"I think it was the result of a complete breakdown in their operation," Morgan said.

Witness decries test site safety measures

By Warren Bates
Review-Journal

A nationally known health physicist with decades of experience in radiation research testified Monday that safety procedures in the 1950s had "broken down very severely" with above-ground nuclear tests.

The comment came from Dr. Karl Morgan, who spent the entire day on the witness stand in U.S. District Judge Philip Pro's courtroom. It was the first day of a massive trial in which families of former Nevada Test Site workers allege radiation illnesses.

Keith Prescott, a 67-year-old Utah retiree, and five families are trying to convince Pro that lax safety procedures caused radiation-induced cancers.

"They were violating rules and regulations that had been firmly established," Morgan said of mid-1950s tests. "There was a complete lack of appreciation for carrying out instructions."

However, the government immediately went on the attack, calling Morgan a deceptive witness who could not be trusted.

U.S. Justice Department attorney Ralph Johnson told Pro that in a previous radium trial in Kansas, a judge found Morgan "totally unreliable" and prone to inventing "intellectually dishonest arguments."

A panel of judges had found Morgan had presented false testimony following the Three Mile Island incident in 1979, Johnson said. He asked Pro to keep Morgan off the stand.

Prescott attorney Dale Harrelson said previous judges have simply disagreed with Morgan's research, which has proved to be right over the years. Pro allowed his testimony, but said he would consider a government motion to strike it.

Morgan, former director of Health Physics at Oakridge National Laboratories, said that as early as 1951 the government had been warned of the risks of ionizing radiation and how it should be handled.

He said safety violations occurred at the test site during:

—A 1952 blast in which 27 of 2,243 participants received higher than allowable doses of radiation and during cleanup of that test.

—A 1953 operation in which 396 people entered a radiation-contaminated area. Morgan said 92 vehicles had to be decontaminated.

—A 1956 test in which he said test site officials failed to inform workers of safety problems.

Morgan also said the U.S. government, when faced with discrepancies between instruments that measured worker exposure, would record the lower reading instead of the safer and more accepted practice of using the higher reading.

Also Monday, Harrelson said a recent Department of Energy disclosure of unannounced blasts could be relevant in the case.

Energy Secretary Hazel O'Leary announced last week the government conducted 800 radiation experiments on 600 people, including 18 injected with plutonium during the 1940s.

Harrelson said those involved in conducting the experiments might be called as experts in the government's case. He asked for the release of their names, saying their credibility is a legitimate question.

Defense attorney James Touhey said Harrelson's motion caught him "completely by surprise."

Judge Pro then asked attorneys on both sides to submit briefs on the issue.

CONTINUED

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attorneys with the Natural Resources Defense Council — one of the most aggressive anti-nuclear advocacy groups in the country. Terry Lash, her new nominee for the position of director for nuclear energy, has also long been active in anti-nuclear efforts promoted by the NRDC and other organizations.

Other Clinton administration officials committed to denuclearization include George Stephanopoulos, senior adviser to the president for policy and strategy. In his salutatory address to Columbia University in 1982, Mr. Stephanopoulos laid out a philosophy toward nuclear arms still in evidence today: "The assumption that nuclear weapons bring security is as absurd as its existence is sad."

Worse yet, President Clinton himself has now publicly adopted the key term: At a Dec. 6 press conference, he said: "We're working very hard with the Russians to continue the denuclearization and to make them and others feel more secure."

It should not be surprising, given this line-up, that the U.S. government has decided not only to forego nuclear testing but to end production of any nuclear weapons and the special materials they require and to proceed with dismantling of the industrial and technological infrastructure associated with these activities. No less at risk is the present and future character of civilian nuclear technology in this country.

It can only be hoped that the outrageous tone and substance of Mrs. O'Leary's pronouncements of Dec. 7 will prompt more thoughtful policymakers and responsible legislators to rethink the choices now being made to promote U.S. denuclearization. Especially in light of Defense Secretary Aspin's statement — made on the same day the energy secretary was releasing her bombshell — concerning the burgeoning problem posed by other nations who are getting into the nuclear weapons business, it is high time to reconsider Clinton policies that will, inexorably and unilaterally, put the United States out of that business.

FRANK GAFFNEY JR.

You have to give Energy Secretary Hazel O'Leary credit at least for having a sense of timing. After all, she chose Pearl Harbor Day to launch what was, arguably, the most devastating single attack on the underpinnings of the U.S. national security structure since Japan's lightning strike on the 7th Fleet 52 years ago.

Ironically, Mrs. O'Leary's target was her own department, what remains of its capacity to conduct activities related to maintaining effective military and civilian nuclear programs and the public support essential to such activities.

In a lengthy — and frequently incoherent — press conference on Tuesday, Dec. 7, 1993, Mrs. O'Leary exhibited righteous indignation as she revealed: that the United States had conducted 204 previously unannounced nuclear weapons tests; the total quantity and precise locations around the country of much of the nation's stockpile of plutonium; that there are "three miles" of ostensibly unduly classified documents (which she will be aggressively trying to declassify); and that predecessors to the Energy Department had conducted radiological experiments on human beings without obtaining the participants' informed consent.

The effect of the secretary's remarks will likely be further to arouse public resistance to vital nuclear programs and activities by promoting the image of a secret government run amok. Set aside the fact that her announcements are, to varying degrees, misleading; they are all inflammatory. Their tone and content certainly seem most unlikely to create a new basis for public trust and confidence in the Energy Department — or her stewardship of it, as she professed to hope they would.

In this regard, it is instructive to consider the following, illustrative

Frank J. Gaffney Jr. is the director of the Center for Security Policy and a columnist for The Washington Times.

Do we really want *Alp* 'denuclearization'?

The effect of the secretary's remarks will likely be further to arouse public resistance to nuclear programs and activities by promoting the image of a secret government run amok.

example of Mrs. O'Leary's comments — and what it suggests about the clarity of thought behind her announcements:

"What's led us here, the ... overhauling [of] our Cold War policies, what we're focusing on — and anybody who watched the press yesterday and the beginnings of the discussion between President Clinton and President Yeltsin and those representing our government to talk about even aiming our capability to deliver nuclear weapons away from Russia pretty much tells us where we are in this overhauling of our Cold War policies and even the way we view former combatants or people with whom we had no allegiance or felt no confidence in."

At best, statements of this sort bespeak a muddleheadedness that should disqualify an individual from holding a position of great responsibility in the United States government. At worst, they suggest that Secretary O'Leary does not have the foggiest idea about what she is doing



Hazel O'Leary

— or the longer-term implications of her actions.

If she doesn't, others around her certainly do, however. Significantly, Mrs. O'Leary listed first among the so-called "stake-holders" she hoped to engage in a "dialogue" on these issues "those who have been interested for years in "denuclearization." Evidently, such individuals include many of her senior subordinates and advisers, other top officials of the Clinton administration and even the president, himself.

For example, Dan Reicher, Mrs. O'Leary's chief of staff, and Gus Speth, the head of the Clinton DOE transition team are both long-time

MARY McGRORY

A2 O'Leary's Energy Is Felt

Energy Secretary Hazel O'Leary has begun to do what her predecessor, Adm. James Watkins, talked about doing, that is "changing the culture at the department." And she is making an honest man of Bill Clinton, who promised during the campaign to open up the secrets of our nuclear enterprises.

Not much was expected of O'Leary by the disarmament and environmental crowd. They feared that a utility executive might shill for nuclear power. For them, the secretary's performance has occasioned some pleasant surprises.

First, it was her critical opposition to the resumption of nuclear testing. State, Defense and the nuclear laboratories favored more blasts. Her own staff was designing a plan for the 15 tests permitted under the law.

O'Leary, admitting ignorance, made her own preparations. She convened a seminar in a secure room in the basement of the Forrestal Building. She called in the directors of the nuclear laboratories at Los Alamos, Livermore and Sandia, all keen testers, and several experts, including testing advocate James Schlesinger and testing foe, Frank von Hippel, who was then at Princeton and has since come back to Washington to work with the presidential science and technology adviser as an assistant on national security.

The secretary came out of two days of meetings convinced that our national security did not depend on further testing. With the help of the Arms Control and Disarmament Agency, she carried the day in the inner councils. Clinton decided to continue the informal moratorium on testing.

Last week, O'Leary took another step to show she takes seriously the Clinton pronouncements on openness in government. She held a news conference to make a huge dump of previously classified information on matters nuclear.

She has long thought that if government was going to regain public confidence and persuade other nuclear nations to come clean on vital data, she would have to tell some secrets: The public should know the shameful truth about plutonium experiments on human beings that were carried out in the '40s and '50s.

Actually, the experiments were revealed at congressional hearings in 1986, but a committee report mandating further investigation came to nothing. The Albuquerque Tribune recently published a series in which reporter Eileen Welsome identified five of the 18 subjects of medical tests that O'Leary called "worthy of Nazi Germany." She has made a probe of the whole project a top priority.

She also gave out previously secret figures about 214 unannounced tests of nuclear weapons, and the content of plutonium stockpiles. As is usual in such cases, the bureaucrats thought she told too much, the arms control experts, too little. "During the Cold War, I would have been arrested for what I said," she said cheerfully.

The fact that she told anything at all has to be considered near miraculous in the light of the secrecy cult at her department, which is still sitting on 3.3 miles of classified documents. Hush-hush is still so pervasive, some environmentalists complain, that they can't get even unclassified information about nuclear blasts of a generation ago.

Although O'Leary cleared her disclosures with the National Security Council, some on her staff thought she would be suspected of being off on a tangent. Spurgeon Keeny of the Arms Control Association thinks that disclosures that many of the secret bomb tests went undetected could provide ammunition to enemies of arms

control, bolstering their claim that verification is impossible. But Keeny applauds O'Leary because "when you open up these subjects to scrutiny by press and academia, you get public discussion, and Congress learns the right questions to ask."

And she got a positive reaction from the Russian Embassy. They requested a videotape of her news conference and all the supporting documents. She took a large bundle of material to present to Viktor Mikhailov, the Russian minister of atomic energy, with whom she is convening in Moscow. We haven't been in a strong position to lecture them because we have been so secretive ourselves.

O'Leary promises more to come. On the most sensitive subjects, she must obtain concurrence from the Department of Defense, which is averse to telling the time to unauthorized persons.

Tom Corcoran of the National Resources Defense Council, who was disappointed that the revelations didn't answer a lot of questions the council submitted to O'Leary, says, "I don't want to criticize her. She has made a first cut. She has started a process."

Radiation cases prove tough to win

Those trying to obtain government compensation for radiation damage have met with little success and continued resistance over the years. The following recaps the most noteworthy court and legislative efforts to recover damages for exposure prior to the Keith Prescott litigation.

Bulloch vs. United States: This case was filed in 1954, shortly after the deaths of several thousand sheep, allegedly the result of 1953 above-ground atmospheric tests. The case judge said sheep ranchers had not met their burden in proving fallout caused the deaths. But 25 years later, he ordered a new trial, ruling government officials suppressed evidence. The U.S. appealed the decision and prevailed. Prescott attorney Larry Johns argues although ranchers lost, the message was the U.S. — to win in court — was able to persuade scientists to falsify or conceal information regarding radiation effects. The government on Tuesday filed a court motion calling Johns' position "scandalous," noting the appeals court found "no support in the record" that the government engaged in deceit.

Baneberry blast: On Dec. 18, 1970, the below-ground test Baneberry vented a large cloud over Yucca Flat at the Nevada Test Site, causing an emergency evacuation of several hundred people who later underwent decontamination procedures. Fourteen test site security guards filed suit, alleging they were negligently exposed to radiation. The cases of two of the men, who died of leukemia, eventually went to trial in 1979. Five years later, judgment was entered in their favor on the issue of negligence, but against them on causation. Then U.S. District Judge Roger Foley said the plaintiffs' evidence of causation was "speculative." An appeal is pending in the 9th U.S. Circuit Court of Appeals that addresses several of the same issues litigated in the Prescott case.

Allen vs. United States: More commonly known as the downwinders case, the suit was brought by people living downwind from tests conducted in the early 1950s. In 1984, a federal judge in Salt Lake City ruled government officials were negligent in failing to warn downwinders of exposure dangers and awarded damages to 10 of 24 victims. His decision was appealed and reversed on the basis of governmental immunity — in other words, the discretionary function of the government to carry out tests in the interests of public policy barred victims from collecting damages.

The Radiation Exposure Compensation Act: In October 1990, former President Bush signed into law this measure, which included a national apology to those who suffered the effects of the atmospheric testing program. Restitution payments were earmarked for those exposed to fallout in the 1950s and in 1962, and to those employed in uranium mines until 1971. The past two years, Congress has appropriated \$200 million for the compensation program, but the Clinton administration has proposed a \$75 million cut for the 1994 budget, angering Utah officials.

Settlements: The United States approved a \$2 million settlement to Japanese fishermen showered with fallout after a test at Bikini Atoll in 1952. In the 1980s, an agreement was also reached with the government of the Marshall Islands for to handle claims for damages resulting from nuclear testing at Bikini and Eniwetok.

Warren Bates

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PLUTONIUM FIRE

Lesson sought in declassified Flats blaze

By Adriel Bettelheim 3C
Denver Post Washington Bureau

It was the smell of burning rubber that first drew security guards Earl Irvin and R.D. Anderson to the Rocky Flats nuclear weapons plant's main production laboratory as they made their nightly rounds on Sept. 11, 1957.

When the two men cautiously opened the lab door in Building 71 of the Jefferson County plant, they made a terrifying discovery: An intense fire — fueled by at least 25 pounds of deadly, radioactive plutonium — had consumed a large glove box and nearby machining equipment.

Battling thick smoke and heat that melted Plexiglas radiation shields, plant firefighters donned protective suits and vainly tried to put out the fire with hand-held extinguishers.

Heat soon escaped into the building's exhaust system, causing an explosion that knocked workers to the floor and started a second fire. That one took 12 hours to put out.

U.S. Department of Energy officials say this was the first plutonium fire in one of its weapons laboratories and one of the most serious industrial accidents of the era, though it caused no fatalities.

The way the fire crippled America's only plant to make plutonium cores for nuclear bombs so concerned government officials that they kept the report classified as top secret for 36 years.

Information revealed

Last week, the Energy Department began releasing information about the case as it declassified thousands of pages of documents related to the Cold War atomic weapons buildup. In doing so, the department lifted the veil on a bomb-making enter-

prise where secrecy was paramount and workers sometimes knew little about the exotic materials they were handling.

"It was part of the old Cold War game of not giving the Soviets anything they could use to learn about our nuclear program," said Jack Keliker, director of the Energy Department's office of intelligence and national security.

Researchers who have pressed for the release of such information say it will help them assess health risks posed to workers at the nation's nuclear plants and to residents in surrounding communities.

The Colorado Department of Health this year concluded that towns near Rocky Flats weren't exposed to unusually high amounts of radiation during the 40 years it processed plutonium.

But some groups say the release of a 36-year-old report isn't enough, and they want assurances that 14.2 tons of plutonium still stored at Rocky Flats isn't posing health risks.

"Revealing the scope and nature of past errors isn't enough to guarantee future public and congressional trust or support," said Stephen Schwartz of the Military Production Network, a conservation group.

Energy Department officials say the plutonium is safe, locked in airtight vaults. But they admit they are finding more scraps and residue of the deadly material as they clean out old lab equipment at the site.

Much of the sensitivity surrounding the 1957 fire was due to the nature of plutonium, a volatile element first produced in large quantities as part of the Manhattan Project in 1945. As late as 1957, the government was

only beginning to understand the dense, gray metal's properties, including its ability to ignite spontaneously in air. It would be years before health studies showed tiny amounts of plutonium introduced in the bloodstream deposited in bones and became a likely cause of leukemia.

Triggers for bombs

What Energy Department officials knew with certainty was plutonium released enormous amounts of energy when detonated, making it an excellent starter for hydrogen bombs. Three years after the first successful Soviet nuclear test in 1949, the government opened Rocky Flats on more than 6,500 acres and contracted with Dow Chemical Co. to make grapefruit-sized "pits" that started the fusion reaction in hydrogen bombs.

By 1957, with the Cold War nearing its peak, Rocky Flats was the second-largest plant in the nuclear weapons complex, churning out thousands of pits for hydrogen bombs and thermonuclear warheads. The report noted Building 71 was handling "several times" the amount of plutonium it had been designed for, "with a corresponding increase of personnel and crowding of equipment." In all, plant officials

CONTINUED

ATLANTA JOURNAL &
CONSTITUTION

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Q&A on the News

Do you have a question about the news — local, national or international? Betty Parham with Gerrie Fer will try to get an answer for you. Call 222-2002 on a Touch-Tone phone and follow the instructions

Many readers have asked questions about the plutonium experiments on humans, acknowledged last week by Energy Secretary Hazel O'Leary. Here's what we learned:

Q: How did this come to light?

A: Eileen Welsome, a reporter for The Albuquerque Tribune, was researching a story earlier this year on radioactive animal burial grounds in New Mexico and saw a footnote about human experiments in a declassified report on atomic experiments on dogs.

Curious about the outcome on the humans, she tried to find them. She found that all 18 people mentioned in the footnote were dead. She located five families of the subjects, who did not know about the experiments and swore their relatives did not know they were being experimented on. This clear-cut infringement on human rights led her to write a three-part series published in the Tribune in November.

Welsome said the subject has surfaced at least twice over the years, most recently in 1986, when a congressional subcommittee looked into human atomic experiments. But nothing came out of that investigation. The humans remained faceless and nameless.

Q: How could the victims not know they were being injected with plutonium?

A: They supposedly were terminally ill or near death from injuries; some were comatose. All were in a hospital at the time of their injections. Many were uneducated.

Q: Where were the experiments done?

A: The first man, suffering from severe injuries from an auto accident, was injected in 1945 at the Army hospital in Oak Ridge, Tenn. He died in 1953. Three patients were at the University of California at Berkeley; three patients were at Billings Hospital at the University of Chicago; and 11 patients were at Strong Memorial Hospital at the University of Rochester, N.Y.

Q: What were their ages?

A: The youngest was a boy of 4 and the oldest a man of 69.

Q: What race were they?

A: Fifteen were white; three were black.

Q: What was the cause of death?

A: A variety of ailments, chiefly cancer, heart attacks and pneumonia.

Q: How long did they live after the experiments?

A: Half died soon after their injections, several lived 10 years or more and two lived more than 40 years, according to Welsome. She said there were only four survivors in 1973, when the first investigation brought these experiments to light.

Q: Who conducted the experiments?

A: They began as part of the Manhattan Project, which developed the atomic bomb in 1945. The now-defunct Atomic Energy Commission subsequently took over.

Q: So did these experiments reveal plutonium's effect on the body?

A: Government scientists haven't released their conclusions. Urine and blood studies were conducted at Los Alamos, N.M., right after the injections, but officials there say they have no records. In 1973, three of the four survivors were taken to Strong Memorial for metabolic studies, still unaware they were being studied. Some subjects have been exhumed, but no conclusions have been published.

Q: A report said the Hubble Space Telescope shuddered when it went from daylight to darkness. Why?

— Dave Todd, Lithia Springs

A: The Hubble telescope got the shivers when it moved in and out of daylight because the rapid temperature changes caused parts of the instrument to expand and contract. In space, with no atmosphere to even out the temperature surrounding the instrument, sunshine makes one side extremely hot, and darkness keeps the other extremely cold. The silicon solar cells on the new arrays will keep it rock steady as it aims into deep space.

THE TIMES ARE CHANGING: Many temple-goers called to tell us that wearing the yarmulke, or Jewish skullcap, is not just a male thing. "There's a strong movement of egalitarianism in the Reform movement of Judaism," said Rabbi Alvin Sugarman of The Temple. He said he doesn't normally wear one, but some of his female assistants do. They can be one color, multicolored or exotically designed. And the headpieces have a more modern, Hebrew name — kippah — to replace the old Yiddish one.

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DEC 12 1993

FORT WORTH STAR-TELEGRAM

'Crazy' father got plutonium injection in secret experiment

BY GRACIE BONDS STAPLES

Fort Worth Star-Telegram

DALLAS - More than two years have passed since Elmer Allen died, and it has taken his daughter, Elmerine Whitfield, that long to cry.

She did it for the first time a week ago when, she said, the reason for her father's alcoholic binges and crazy babblings became clear. He had been "used as a guinea pig" in a secret government experiment in which he and 17 other people were injected with plutonium.

"I can't tell him now that I understand," Whitfield said yesterday.

"Sunday was the first time I ever did."

In an interview yesterday at the office of U.S. Rep. Martin Frost, Whitfield, a Dallas schoolteacher, recalled life with her father in Italy, a small town south of Dallas where everyone knows everyone and "everybody thought [Elmer Allen] was crazy."

Last month, an Albuquerque newspaper reported that Allen, an amputee who had been classified paranoid schizophrenic after claiming he had been involved in a gov-

(More on PLUTONIUM on Page 32)

ernment experiment, was telling the truth. He had been a railroad porter before his leg was amputated.

Whitfield has been able to get some of the records concerning her father, but she wants all of them.

At her request, Frost and Rep. Eddie Bernice Johnson, both Dallas Democrats, have asked the Energy Department to release Allen's medical records to his family.

Frost said that his staff is looking "at the possibility of drafting legislation so that the victims' families will be compensated."

Energy Secretary Hazel O'Leary has directed that as much information as possible be released on those involved in the plutonium experiment, as well as on about 800 other

people involved in different types of radiation tests.

"I think what the government did was outrageous," Frost said. "This is the type of thing you hear about the Russians doing, not the U.S. government."

Allen, who died at age 80 on June 30, 1991, was injected with plutonium during the 1940s as part of a secret government experiment to try to determine how much of the

radioactive element a person had encountered.

Allen was injected July 18, 1947, in San Francisco, three days before his leg was amputated for what doctors described as pre-existing bone cancer.

Plutonium is a highly radioactive element that is the key ingredient in an atomic bomb. Scientists say exposure to plutonium can potentially cause cancer and possibly lead to

chromosomal instability that could affect future generations.

None of the patients involved was told the nature of the experiment.

Whitfield said that even if her father had been told, he wouldn't have understood. She said that her family did not know of the experiment until the newspaper contacted them a year ago.

"You can't fathom this," she said. "I think it's the most heinous thing that has been done to anyone in the United States of America. It sounds like a movie."

Whitfield said she blames the government for everything her family has endured.

"They took his manhood away," she said. "Everybody thought that my father was a crazy man."

Whitfield said she doesn't know what she will do with the documents tracking her father, but she said: "I want everybody to know what they did to him."

BURRELLE

NEWS EXPRESS

PAGE 14 OF 2

2 from Bay Area were guinea pigs in nuclear experiments

Valley Times

Sunday, December 12, 1993

FRONT PAGE

By PETER WEISS

LIVERMORE — Even before the unlocking last week of long-kept secrets such as the true number of U.S. nuclear tests, a darker history of a questionable medical experiment by wartime atomic scientists in the Bay Area and elsewhere emerged from once-secret files.

The experiment was carried out on 18 people who, apparently without their consent or knowledge, were injected with plutonium — one of the most toxic radioactive substances known and a key ingredient of nuclear bombs.

The experiment had already come to light in the news media in the late 1970s and then again in a 1986 study by a congressional subcommittee. Subcommittee Chairman Rep. Edward Markey, D-Mass., compared it — along with hundreds of other questionable experiments that occurred nationwide from the 1940s through the early 1970s — to “the kind of demented



human experiments conducted by the Nazis.”

Researchers also used radioactive uranium and radium in other experiments. They fed their subjects fallout from nuclear weapons blasts or had them breathe radioactive air or eat radioactive fish.

None of their names had come to light until November, when an investigative reporter at the Albuquerque (N.M.) Tribune identified five in a series of articles examining the experiment and those affected by it in detail.

The paper reported that two of the five lived in the Bay Area — in Oakland and in Healdsburg — and, between 1945 and 1947, left the University of California Hospital in San Francisco — where they had gone for treatment of their ailments — without knowing their bones and organs

were laced with plutonium.

A 4-year-old boy whose identity remains unknown also received an injection containing the toxic metal at the hospital.

The experiment again leaped to national attention when Energy Secretary Hazel O'Leary, head of the federal agency in charge of nuclear weapons development and production, the successor agency to the institutions that had sponsored, and then hidden, the experiment, told a news conference Tuesday that she was “appalled, shocked and deeply saddened” by it.

But O'Leary also said she would not divulge the names of the other 13 — who are all dead — unless their families gave permission.

The scientists who carried out the plutonium experiment wanted to know where the dense, silvery metal — which many people would soon be working with to produce nuclear bombs — would accumulate in body tissues and how quickly it would be excreted from them. Tests in animals, they concluded, were not enough.

The researchers worked for the Manhattan Project, which produced the atom bomb and which later evolved into the Atomic Energy Commission, which would set up Lawrence Livermore Laboratory in 1952.

Livermore lab scientists were not involved in the plutonium experiment, and “not even the beneficial effects of treating disease” with radiation were studied at Livermore, according to the first head of the lab biology program, John Gotman.

While widely condemned, the plutonium experiment also has its defenders.

Patricia Durbin, a physiologist with Lawrence Berkeley Laboratory who conducted follow-up studies of experiment survivors in the early 1970s, praised the study for data it yielded on plutonium metabolism. Durbin had worked at Crocker Radiation Laboratory — a predecessor to Lawrence Berkeley lab — for a scientist in charge of the experiment in the Bay Area — although she hadn't worked on the original study.

Page 1 of 2

“The data from those people is the base for all of our radiation protection standards that deal with plutonium,” Durbin said. “All the animal studies are to some degree window-dressing. We always come back to that group of 18 people.”

Those plutonium standards have protected thousands of people who have worked with the substance helping the United States build its Cold War nuclear arsenal, she said.

“The only thing people can really rail at,” she said, “is that there are no records that these people would have given — by modern standards — what's called informed consent. But that's revisionist history, because things were not done in the '30s and '40s the way they're done now.”

Since June 1991, a uniform code of research ethics has embraced the Department of Energy and all other government agencies so that even informed consent is no longer enough, said research ethicist Charles Mackay of the National Institutes of Health in Bethesda.

At public institutions across the country, review boards of scientists and lay people independent of both the experiments and the institutions conducting them must approve research involving humans, he said.

“If they don't think it's safe, your consent isn't enough. Because it won't get that far,” Mackay said.

Although the plutonium injections took place when there were fewer formal rules governing medical research, “the end never justifies the means,” he said.

“Everyone has a right to refuse unwanted invasions of their body ... even if for medical care, let alone research. ... Even if somebody could say there was a direct benefit to other people, you're not permitted to do that,” he said.

Mackay and others said that as the plutonium experiment was being carried out, the principles of the Nuremberg Code, which demands informed consent, were being formulated. Allied victors were also condemning Nazi doctors for horrendous experiments on concentration camp inmates.

The 18 people injected with plutonium are dead, but no evidence has come to light that the plutonium, which is well known as a carcinogen, harmed or killed any of them, the Tribune article says.

Although the paper reported that subjects were supposedly chosen because doctors thought they wouldn't live more than 10 more years, the records disclosed show that seven outlived that expectation, with five surviving between 20 and 44 years after the injections.

Compared to Nazi medical experiments, the plutonium study "wasn't nearly as shocking," MacKay said, "but the ethical principle violated here is exactly the same."

To Elmerine Whitfield-Bell, a Dallas eighth-grade teacher who is the daughter of Elmer Allen, one of the subjects identified by the Tribune, the experiment was "the most heinous act perpetrated upon human beings that I've ever heard of."

She denounced it "even more so because they tracked those people for years and never told them they were injected with plutonium," she said.

The Tribune reported that doctors at UC Hospital injected her father in his left leg in July 1947, shortly before they amputated it to combat what they diagnosed — possibly incorrectly — as bone cancer. The railroad porter, who lived with his wife and two children in the East Bay at the time, signed no consent form, but, according to a doctor's report, agreed to an experimental injection with a "radioactive tracer sample."

Allen, the last of the 18 to be injected, was also the only one whose records showed any evidence of an attempt to secure consent, the Tribune reported.

According to statements given the Tribune by family doctors Allen saw later in Texas, he eventually learned that he had been injected with plutonium. But his family remained unaware until they were contacted by the Tribune's reporter in July 1992 — after Allen had died at age 80, 44 years after the injection, Whitfield-Bell said.

Throughout those 44 years, according to the Tribune account, the Manhattan Project and the agencies that took over from it continued to keep tabs on Allen. Agency officials communicated with his doctor and even made arrangements — which they did not follow up — to acquire his remains when he died.

The other California subject the Tribune named, Albert Stevens, a house painter from Healdsburg, died more than 20 years after receiving a plutonium injection. The plutonium experiment on him began four days before he was operated on for what doctors apparently misdiagnosed as stomach cancer, the Tribune reported.

The paper said that a few years after Stevens' death, the laboratory in charge of follow-up studies on the experiment secured permission from his family to study his ashes. As the authorities had all along, the laboratory didn't disclose the real reason for its interest and, according to the Tribune, never returned the remains.

The Albuquerque Tribune and Technology Review contributed to this story.

DENVER POST

DEC 12 1993

An ugly legacy emerges as nuclear secrecy fades ²

It was astonishing to learn this week that the federal government was conducting secret nuclear weapons tests as late as 1990. By that time, even publicly announced tests were beginning to seem unwarranted because of the thaw in the Cold War.

But even more troubling was the suggestion by Energy Secretary Hazel O'Leary that Americans will be truly appalled by information that is still to come out concerning radiation tests performed on hundreds of human subjects in the 1940s and '50s.

About 800 experiments are now said to have been conducted in an attempt to assess the effects of radiation exposure on soldiers, nuclear workers and civilians, including one in which 18 people were actually injected with plutonium — the basic ingredient in a thermonuclear explosion.

Such morally repugnant research may have seemed necessary in the fearful years in which Soviet communism was replacing the Nazi menace as the principal

threat to the Free World. But today the testing serves as a reminder of how seriously this nation's commitment to free choice and common decency was undermined by the rush to keep up with the Russians.

As O'Leary pointed out in announcing plans to declassify millions of pages of documents on the nuclear weapons program, "We were shrouded and clouded in an atmosphere of secrecy. And I would take it a step further. I would call it repressive."

We were, in short, behaving much like our enemies. It may have been understandable, given the climate of the times. But as we come to grips with this unsettling heritage — everything from the 200 underground tests that Nevadans were never told about to the lung-cancer risks that uranium miners were never warned of — we must admit that while the overall aim may have been to save lives, much of what went on was outrageous and indefensible.

BURRELLE'S

NEWS EXPRESS

PAGE 2 OF 23

Sasser Wants Report on Oak Ridge Radiation Experiments on People pwljrlsfon

By The Associated Press

Sen. Jim Sasser said Saturday he is concerned about radiation experiments on unknowing Oak Ridge residents and called on Energy Secretary Hazel O'Leary for detailed information about the tests.

Sasser, who outlined his concerns in a letter to Mrs. O'Leary, said his request was promoted by the energy secretary's release of previously classified information about the DOE and its predecessor, the Atomic Energy Commission.

"I am also concerned that we are not yet aware of the full extent of this type of experimentation and that many victims remain anonymous and perhaps unaware of the kinds of experiments to which they were subjected," Sasser wrote.

Sasser requested a "comprehensive list of the experiments that were performed including the date and locations of the experiments and what action, if any, was taken to compensate these victims."

Mrs. O'Leary said Tuesday she was stunned by such tests, many of them dating back to the 1940s, and has directed that as much information as possible about them be assembled for public distribution as early as next summer.

She said she was "appalled, shocked and deeply saddened" to learn that 18 civilians had been injected with highly radioactive plutonium in the 1940s to determine what doses workers might be exposed to safely.

About 800 other radiation tests were conducted involving some 600 individuals.

"I believe the people of Tennessee have a right to this information," Sasser said.

In her Tuesday announcement, Mrs. O'Leary also released previously classified information that about 24 million pounds of mercury is believed to have been used at the Y-12 weapons plant at Oak Ridge.

Incomplete records prevent a fully accurate accounting of the quantities received, used, and lost to the environment in Oak ridge, she said.

The Energy Department previously had estimated that about 750,000 pounds of mercury had been released, much of it into the nearby East Fork of Poplar Creek, at the Oak Ridge plant as part of the weapons production process.

[DOE]

Interpreting the new DOE information

The headlines screamed out all over the nation Wednesday.

- The United States conducted 204 previously unannounced nuclear weapons tests during the Cold War.

- Men and women were injected with plutonium to determine the effects of exposure to radiation in experiments that took place here and elsewhere in the 1940s and 1950s.

- New nuclear waste dumps have been identified.

- Millions of tons of mercury have been released into the environment in Oak Ridge.

Energy Secretary Hazel O'Leary and others presented mountains of declassified documents to reporters, environmentalists and others in a special briefing Tuesday morning in Washington.

"We were shrouded and clouded in an atmosphere of secrecy," O'Leary said at the news conference, where the new details were disclosed. "And I would take it a step further: I would call it repression."

DOE officials said that among the millions of documents yet to be reviewed might be more information about previously disclosed experiments in which hundreds of human subjects were exposed to plutonium without granting informed consent. Although extensive details of those tests were disclosed in 1986, O'Leary said she was "appalled and shocked and it just gave me an ache in my gut and my heart" when she heard of them.

O'Leary's remarks were dramatic, timely. They send the message that DOE is changing, and changing radically from its Cold War mode of operation. Her attitude toward the secrecy at the department and the lack of public trust it engendered stand in marked contrast to attitudes expressed publicly by any former energy secretary,

and we welcome the changes.

But the information released Tuesday poses all sorts of new problems for the public and news organizations that try to bring it to the public.

Principal among the problems is interpreting complex data. For example, the one-acre hazardous waste dump identified in the documents near the center of the Oak Ridge Reservation: Is it a new problem, or simply more of the same types of environmental cleanup problems the state, Environmental Protection Agency and DOE have been working to clean up for the last several years? A former DOE official contacted by The Oak Ridger says it is the latter, and the only reason the site was classified was because some of the material in it was in the shape of bomb components.

There is also the problem of putting the information into proper historical context. The disclosures could, over time, produce substantial new insights into the nuclear weapons program, of value to historians, arms control experts, and environmental groups and civilians who live near nuclear production plants and are concerned about the health and safety effects of the program. But it will probably take time to do that job well and not all of the information, according to DOE, is available to the public yet.

Today we are shocked by some of the revelations, particularly about human experiments and the quantities of materials produced through the weapons complex. Undoubtedly more information will come out as reporters wade through the documents.

The information will help us better understand the last 50 years of our history, both as a community and a nation. And that is good, but it is going to take some time to do the job well.

BC-NUCLEAR-BRITAIN

NUCLEAR TESTERS HAD NO ADDED CANCER RISK - STUDY

LONDON (Reuter) - Thousands of British servicemen who took part in atmospheric nuclear weapons tests during the 1950s and '60s suffered no significant long-term cancer risk, according to a medical study funded by the Defense Ministry.

"Participation in nuclear weapon tests had no detectable effect on expectation of life or on subsequent risk of developing cancer or other fatal diseases," the authors of the seven-year study, which was released Thursday, said.

The study deals a major blow to compensation claims by veterans who say they were given minimal protection against nuclear fallout from the explosions between 1952 and 1967.

The researchers studied 21,400 servicemen and civilians who took part in the tests in Australia and the Christmas Islands in the South Pacific. They compared cancer rates of this group against a control group of 22,300 service personnel who had not participated in the tests.

A similar study in 1988 suggested the participants might have had a greater risk of two cancers, leukemia and myelomatosis, but not of other diseases.

The new study by cancer expert Sir Richard Doll dismissed the earlier survey's findings as chance occurrences.

But the new study, to be published in the British Medical Journal on Friday, said: "The possibility that test participants experienced a small excess risk of leukemia in the first 25 years after participation cannot be ruled out."

The study was carried out by eight cancer specialists, including Doll. Six of them came from the National Radiological Protection Board, a government agency.

The present study includes an estimated 85 percent of participants in the nuclear tests.

REUTER

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[Nuclear]

BALTIMORE SUN

DEC 08 1993

U.S. ran radiation tests on unsuspecting people

Agency discloses '40s experiments

Los Angeles Times

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WASHINGTON — The Energy Department disclosed yesterday that over a 45-year period the United States conducted 204 previously unreported underground nuclear tests and deliberately exposed at least 18 Americans to dangerous levels of nuclear material.

Energy Secretary Hazel R. O'Leary said she planned to release more information in June about experiments conducted on 18 people in the 1940s to assess effects of plutonium radiation.

Those tests were among an estimated 800 radiation experiments conducted on more than 600 individuals over the years.

While the existence of those experiments has previously been disclosed in a congressional report and other documents, few details were known.

All 18 of the subjects have died.

Ms. O'Leary said, adding that laws assuring the privacy of government employees prevented the immediate release of their names and cause of death.

Ms. O'Leary said she was "appalled, shocked and deeply saddened" to learn about the experiments, saying: "It is apparent that informed consent could not have taken place."

In disclosing the 204 secret nuclear tests, Ms. O'Leary acknowledged that 34 of the tests released radiation into the atmosphere. The tests occurred between 1963 and 1990 at the department's Nevada test range. The additional figures bring the total of U.S. nuclear tests to 1,051.

Department disclosures are expected to aid communities surrounding the 17 major nuclear weapons facilities. Those activities appear to be linked to elevated levels of cancers and environmental degradations in Washington, Ohio, South Carolina and Nevada.

In citing an environmental degradation, Ms. O'Leary reiterated a department finding that roughly 750,000 pounds of mercury has



ASSOCIATED PRESS

Energy Secretary Hazel R. O'Leary said she "appalled" by 18 civilians being injected with highly radioactive plutonium.

been dumped into a tributary of a stream in Oak Ridge, Tenn. The mercury, which is associated with birth defects and nervous system disorders, was dumped by a plant that produced uranium components for nuclear weapons.

Ms. O'Leary promised further disclosures as she tries to win public confidence in the department.

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BURRELLE'S

U.S. Reveals 204 Nuclear Tests, Plutonium Exposure

By MELISSA HEALY
TIMES STAFF WRITER

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WASHINGTON—Shedding a cloak of Cold War secrecy, the Energy Department revealed Tuesday that the United States conducted 204 secret underground nuclear tests over 45 years and deliberately exposed at least 18 Americans to dangerous levels of nuclear material.

Energy Secretary Hazel O'Leary said the revelations, made possible by the end of the nation's nuclear rivalry with the Soviet Union, represent the most sweeping declassification of information in the department's history. She promised additional disclosures as she tries to win new public confidence for the department, which took over the development and manufacture of the nation's nuclear weapon stockpile in 1977.

"We've got to expose the impact of the Cold War, both in terms of its environmental health and safety impacts and also impacts on . . . the psyche of the nation," O'Leary told reporters. "One of the benefits to openness will be to build public trust."

O'Leary stressed that the disclosures will not aid Third World countries wishing to develop nuclear weapons. "While we are releasing information, we're not putting other information in the hands of people from terrorist states who could design a very crude bomb and do damage," she said.

O'Leary declared that she has been "shocked and amazed" at shortcomings in the management of the nation's nuclear weapon complex under Cold War administrations. Among the effects of the department's secretive leadership

is an environmental cleanup bill that may reach hundreds of billions of dollars.

The department's new willingness to reveal secrets is expected to aid many of the communities surrounding the 17 major facilities involved in the development, manufacture and testing of nuclear weapons. Those activities appear to have brought elevated levels of cancers and a wide range of environmental and health concerns to communities in Ohio, South Carolina, Washington and Nevada.

In disclosing the secret nuclear tests, O'Leary acknowledged that 34 of them released radiation into the atmosphere. The tests occurred from 1963 to 1990 at the department's Nevada test range.

In recent years, independent experts have greatly underestimated the number of secret underground nuclear tests, calculating that about 118 took place instead of 204. The additional figures bring the total of American nuclear tests to 1,051 since the dawn of the Nuclear Age.

Arms control experts pressing for a total halt to U.S. nuclear tests noted Tuesday that the government's ability to conduct the tests in recent years without being detected by modern monitoring devices raises questions about whether nations and watchdog groups would be able to verify any comprehensive international ban on nuclear weapons.

O'Leary said she plans to release more information in June about experiments in which 18 people were injected with plutonium in the 1940s. Those tests were among an estimated 800 various experiments involving more than 600 individuals over the years.

The experiments previously were disclosed in a congressional report and other documents, but few details are known. All 18 of the plutonium subjects have died, and laws assuring the privacy of government employees prevents immediate release of their names and cause of death, O'Leary said.

The Albuquerque Tribune recently reported on the testing and named five people it said were among the 18. Those five were injected with plutonium as part of work being done by the Manhattan Project in the development of the atomic bomb, the newspaper said.

O'Leary said she was "appalled, shocked

and deeply saddened" to learn of the experiments. Based on her own briefings, she said, "certainly by the standards of today, it is apparent that informed consent could not have taken place."

In other disclosures, O'Leary reported that the department had produced 89 metric tons of plutonium—enough for nearly 15,000 crude nuclear warheads—over the years. The nation has built 70,000 nuclear weapons, arming most of them with plutonium recycled from earlier warheads.

In a demonstration of environmental degradation linked to production of nuclear weapons, O'Leary reiterated a department finding that roughly 750,000 pounds of mercury have been dumped into a stream in Oak Ridge, Tenn. The mercury, associated with birth defects and nervous system disorders, was dumped by the Energy Department's Y-12 plant, which produced uranium components for nuclear weapons.

Not included in Tuesday's accounting are details of the nation's inventory of highly enriched uranium or the size and characteristics of the U.S. nuclear arsenal and year-by-year plutonium production at the Energy Department's plants in Hanford, Wash., and Aiken, S.C.

O'Leary said other details may come after department officials review for possible declassification about 32 million pages of information—a stack of documents three miles high—related to the nuclear weapon and energy program.

The new cache of information also is expected to be a boon for historians of the American nuclear weapon program. "It may indicate research directions that did not yield a useful nuclear weapon, or the testing of concepts that never materialized," said Steven Aftergood, director of the Project on Government Secrecy at the Washington-based Federation of American Scientists.

Among the secrets the new information could help to unlock, Aftergood said, are details of a rumored weapon developed in the 1960s that was designed to use a nuclear blast to accelerate pellets toward a distant target. Such a weapon would have been a key forerunner to technologies later explored in the Pentagon's "Star Wars" missile defense program.

CONTINUED

Test subject may be revealed

by Paul Sloca
Oak Ridger staff

Newly declassified information released by the Department of Energy may provide further clues to the identity of a black male in Oak Ridge who was the first person injected with plutonium as part of human experiments conducted by the government.

The first injection, which was administered without the patient's knowledge at the U.S. Army's Manhattan Engineer District Hospital in Oak Ridge, was one of 18 plutonium experiments involving humans conducted in 1945 and 1946 that were sanctioned by the Atomic Energy Commission, a DOE predecessor agency.

The Oak Ridge patient, age 55, was injected with 4.7 micrograms of plutonium on April 10, 1945, according to DOE documents marked "Confidential: Official Use Only." He died eight years later from heart failure, the documents state.

The Oak Ridger obtained the documents last week from a government official in Washington, D.C., who asked not to be identified.

The name of the Oak Ridge patient remains classified and protected by privacy act provisions, but Energy Secretary Hazel O'Leary said Tuesday at a press conference in Washington that more documents on the experiments would be released and that the names of the people involved could also be released, pending approval from their families. DOE is

expected to contact those families in the near future, O'Leary said.

Five of the patients have already been identified in a three-day, special-section series of stories published in November by The Albuquerque (N.M.) Tribune.

The purpose of the experiments, according to the confidential documents, was to establish the criteria for workers who were exposed to plutonium and determine the human tolerance for the substance.

Plutonium, used in the production of nuclear weapons, is a man-made element that emits alpha radiation, which cannot penetrate a piece of paper but which if ingested can damage or kill human beings.

The unidentified Oak Ridge patient, labeled HP-12 in the documents, was hospitalized here as a result of injuries sustained in an automobile accident on March 26, 1945. The injuries were fractures of both kneecaps and of both bones in his right forearm.

Examination at the time showed the man had a cataract in his left eye and marked arthritic changes in both knees.

To determine the disposition of plutonium in his body, two bone specimens were obtained during surgery to reduce his fractures, and a number of his teeth were obtained at a later date, according to the documents. Blood, urine and other excretion samples were also taken and measurements involving his red and white blood cell counts and hemoglobin level were also tracked.

The plutonium was injected intravenously in a solution referred to in the documents as plutonium salts, which were created when so-

dium nitrate and water were added to dilute the plutonium.

The Oak Ridger was unable to determine the man's identity. There were no reports of the car accident in the Oak Ridge Journal, a news publication in existence at the time, and The Oak Ridger was unable to find records in Oak Ridge on the death of a black male on April 13, 1953, the date the man died. There was also no obituary printed in The Oak Ridger, and whether the man remained in Oak Ridge following the post-accident experiment is not known.

The patients used in the plutonium experiments had to be at least 45 years of age and those chosen were not expected to live more than 10 years so that post-mortem examinations could be conducted as quickly as possible, according to the confidential documents.

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DOE unveils list of human radiation tests

No new Hanford cases cited

By WANDA BRIGGS
and JOHN STANG

Herald staff writer

A massive secret list of human radiation experiments declassification Tuesday contained no reports of previously unknown Hanford-related experiments.

ington, D.C., press conference televised on a public access channel in the Tri-Cities.

In the same press conference, DOE announced:

- Eleven metric tons (12.1 tons) of plutonium is stored at Hanford—a previously classified figure that does not surprise Hanford watchers.

- Hanford produced 53 metric tons of the 89 tons of weapons-grade plutonium made in the United States. N Reactor produced 2.5 metric tons of that amount.

Hanford also produced 13 kilograms of tritium and 13 metric tons of reactor-grade plutonium.

- Hanford's storage and burial sites at the Plutonium Uranium Extraction Plant, K-East Basin and 200 West Area are among DOE's eight top priority sites for cleanup action. Sixty-six facilities at 11 sites were studied.

Energy Secretary Hazel O'Leary meets reporters at the Energy Department in Washington, D.C., to announce release of nuclear weapons test documents.

Energy Secretary Hazel O'Leary said the U.S. Department of Energy has tallied 800 radiation experiments involving about 800 people since the 1940s.

She cited those figures in a Wash-

ington, D.C., press conference. DOE plans to release information on the 800 human radiation experiments by June.

DOE still is gathering the data.

"None of the data is at DOE headquarters, but it is in hospitals and laboratories," O'Toole said.

She added: "We're trying to figure out how to get our arms around (the figures) and proceed."

Information on those experiments at Hanford is kept at Battelle-Northwest.

Battelle spokesman Jerry Holloway said the documents to be declassified "appear to have nothing new (since a 1986 declassification), at least to the best of our knowledge."

Holloway noted Hanford radiation experiments with humans were listed in a massive declassification of secret documents in 1986.

No plutonium-related human experiments appear to have been conducted at Hanford, he said.

DOE's 1986 declassification noted: ■ Fourteen Hanford volunteers were given the radioactive isotope promethium orally and intravenously in 1967 to study the removal of the isotope from the human body. Battelle-Northwest and the Hanford Environmental Health Foundation con-



Associated Press

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ducted the tests.

■ Sixty-seven volunteer Oregon State Prison inmates were irradiated in their testes between 1963 and 1971 to obtain data on the effectiveness of ionizing irradiation on testicular cytochemistry. Information on who conducted the tests was unavailable Tuesday.

■ Sixty-four volunteer state penitentiary inmates at Walla Walla were also irradiated in their testes in studies conducted between 1963 and 1973. The University of Washington conducted the tests.

The inmates were required to have vasectomies to prevent the possibility of defective children.

Recently, the Albuquerque (N.M.) Tribune reported 18 people were infected with plutonium as part of work being done by the Manhattan Project in the 1940s in the development of the first atomic bomb.

Todd Martin, a research specialist for the Spokane-based Hanford Education Action League, said that activist group does not expect new Hanford human experiment revelations out of this latest declassification.

He said there are still unresolved questions about the so-called Green Run, a 1949 Hanford experiment in which radiation was deliberately released into the atmosphere to mea-

sure its effects at Hanford and the surrounding area.

The underlying reason for the Green Run still is secret.

Also Tuesday, DOE announced that 11 metric tons of mostly reactor-grade plutonium is stored at Hanford, which has one-third of the 33.5 tons of plutonium currently stored at six DOE sites. Rocky Flats, Colo., has the largest amount at 12.9 metric tons.

Westinghouse Hanford Co. and DOE said Hanford's plutonium is stored as follows:

■ Four metric tons is part of the spent N Reactor fuel. Most of that fuel is in canisters in the water-filled K Basins.

Many of those capsules are opened and still need to be capped.

A small amount of N Reactor plutonium is stored at the PUREX plant.

The spent N Reactor fuel contains 0.2 metric ton of weapons-grade plutonium.

■ 3.2 metric tons is from the Fast Flux Test Facility.

It is stored in sodium-cooled containers next to the FFTF. Plans call for it to be transferred to dry, above-ground containers.

■ 3.8 metric tons is plutonium scraps and oxides stored at the Plutonium Finishing Plant vault.

ATLANTA JOURNAL

DEC 08 1993

Administration pledges to open records on radiation tests conducted on humans

ASSOCIATED PRESS

Washington — The Clinton administration promises to open for public scrutiny one of the darkest chapters of America's nuclear history: radiation testing on hundreds of human guinea pigs, often without them knowing the health consequences.

Energy Secretary Hazel O'Leary said Tuesday she was stunned to learn of such tests, many of them dating back to the 1940s, and has directed that as much information as possible about them be assembled for public distribution, perhaps by next summer.

"It left me appalled, shocked and deeply saddened," she said about information that 18 civilians had been injected with highly radioactive plutonium in the 1940s to determine what doses workers might be exposed to safely.

"It is apparent that informed consent could not have taken place," she said, adding that the

*"It left me appalled,
shocked and deeply
saddened."*

Hazel O'Leary
Energy secretary

details of the tests "just gave me an ache in my heart." All the individuals are dead, although many of them lived for years after the injections.

Recently, the Albuquerque Tribune reported the plutonium injections and identified five of the 18 individuals. It said the last of the 18 people — considered chronically ill at the time — died two years ago.

"It is a dark, terrible side in the history of the nuclear weapons establishment, that they experimented on their own people without informed consent," said Arjun Makhijani, president of

the Institute for Energy and Environmental Research, which examines nuclear weapons issues.

"The majority of the experiments were clearly below ... the standards of correctness," said O'Leary, promising to produce more information about them by next June.

Declaring a new era of openness at the Energy Department, O'Leary also released summaries of previously secret information about nuclear tests in Nevada, the amount of plutonium produced over the last 50 years and the amount of plutonium at most of the department's weapons plants.

The department disclosed that the government concealed 204 nuclear tests between 1963 and 1990, about one-fifth of all the tests conducted since 1945. All of the previously undisclosed tests occurred at the Nevada test range, including 34 in which there was some radiation released.

Dogs forced to inhale plutonium dust in '70s Hanford safety tests

■ Nineteen of the 500 beagles develop cancer, but recent studies indicate plutonium does not increase a risk of cancer

By JAMES LONG

of The Oregonian staff

A17

Battelle Northwest Laboratory scientists forced 500 beagle dogs to inhale plutonium dust in the 1970s to check the adequacy of occupational safety standards for Hanford plutonium workers.

In one experiment, a group of 20 dogs inhaled a speck of plutonium almost too small to see, and 19 developed lung cancer.

There were no known human experiments at Hanford resembling the ones described Tuesday by U.S. Energy Secretary Hazel O'Leary.

But Hanford's studies with beagles added to plutonium's sinister reputation as a carcinogen, giving credence to its description as "the most poisonous chemical known," which was how it was described by no less an authority than Col. Stafford Warren, chief medical officer of the Manhattan Project.

But more recent studies of accidental human exposures to the reactor-made material appear to go counter to its persistent image.

George L. Voelz and J.N.P. Lawrence of Los Alamos National Laboratory did a 42-year follow-up of 26 workers who received high occupational doses of plutonium at Los Alamos. They found that the exposed workers lived about as long as their peers.

In fact, the exposed workers lived considerably longer than other white men in the general population, said the study, which appeared in the August 1991 issue of Health Physics.

"Four persons from the original group died as of 1987 of lung cancer, myocardial infarction, accidental injury and respiratory failure due to pneumonia," the study said. "This is less than half of the expected deaths based on U.S. death rates of similar white males, which would have been 9.2."

Subsequent to 1987, the study went on, three more from the group died from atherosclerotic heart disease, lung cancer and bone cancer.

"Three cases (of lung cancer) in a group of 26 men over a 44-year period is a higher incidence than expected, but still within the limits of expectation," the study said.

It noted that the men who died of lung cancer had a long history of cigarette smoking.

Harvey Ragan, Battelle's chief toxicologist who participated in the beagle studies, said he wouldn't dispute the Los Alamos findings.

"There are no known cases of cancer related to plutonium exposure, as far as I'm aware," Ragan said.

A 1987 study by G.S. Wilkinson and others in the American Journal of Epidemiology tracked 224 plutonium-exposed workers over a 33-year period and found only one lung cancer death.

In another study, Los Alamos statistician Gary L. Tietjen studied the death rate of plutonium-exposed workers at the Rocky Flats fabrica-

tion plant near Denver and found it significantly lower than for the general population.

Tietjen reported in the May 1987 issue of Health Physics that only 67 of the workers had died, against an expected 95. There were only 14 cancer deaths instead of the expected 20, and just one of those was lung cancer, he said.

Tietjen said that comparing exposed workers with unexposed workers at Rocky Flats instead of with the general population showed that "an exposed person is about one-fifth as likely to get lung cancer as an unexposed person at the same facility."

He noted that a study of 457 Hanford workers who had been exposed to radiation at least 10 years earlier — long enough for a solid tumor to develop — turned up only one lung cancer case instead of the expected 3.4.

"That is only 29 percent of the expected deaths," Tietjen pointed out.

Tietjen said it was possible that plutonium-exposed workers were healthier than the general population because their duties and equipment made it impossible for them to smoke on the job.

Richard E. Weller, another Battelle scientist who worked on the beagle studies, said he wasn't sure what the human data meant — but was confident it didn't exonerate plutonium as a carcinogen.

"It certainly is a carcinogen," he said. "However, in my own personal opinion I think that, based on the work I've been involved in, the risk is overrated."



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U.S. Concealed N-Weapons Tests

Radiation Doses Hit 800, O'Leary Says

By John Fleck

JOURNAL STAFF WRITER

The U.S. government, in a pitched Cold War battle, concealed more than 200 nuclear weapons tests from the public between 1963 and 1990 in an attempt to hide nuclear secrets from our Soviet adversaries, Energy Secretary Hazel O'Leary revealed Tuesday.

"We were in a struggle for survival as a nation," O'Leary said in a Washington, D.C., news conference.

O'Leary also acknowledged that about 800 human subjects were exposed to radiation in experiments early in the nuclear age, a larger number than previously uncovered by Congressional investigators looking into the issue.

Thirty-seven of the previously unannounced nuclear test blasts, conducted underground at the Department of Energy's Nevada Test Site, caused radiation leaks,

according to documents released by the department.

None of that radiation was ever detected outside of the test site's boundaries, the department said.

In all, according to the information released by the department Tuesday, the United States has conducted 1,051 nuclear test blasts since Manhattan Project scientists blew up the first atom bomb in the New Mexico desert in 1945.

Tuesday's declassification, part of an effort by O'Leary to reduce secrecy surrounding the nuclear weapons program, included the disclosure that Los Alamos National Laboratory currently has a stockpile of more than 5,700 pounds of plutonium, the dangerously radioactive metal at the heart of nuclear bombs.

According to independent estimates of the amount of plutonium in a nuclear weapon, that is enough for more than 600 bombs.

Los Alamos spokesman Jim Danneskiold said the plutonium is used for research purposes. Los

MORE: See U.S. on PAGE A7

CONTINUED FROM PAGE A1

Alamos is the Energy Department's leading plutonium research center.

Other DOE sites with more plutonium on site than Los Alamos are Hanford in Washington state; Rocky Flats in Colorado, and the Argonne National Laboratory-West in Idaho, which does nuclear reactor research.

O'Leary released the information during a Washington, D.C., news conference broadcast by satellite around the country.

O'Leary also Tuesday said she hoped eventually to reveal the

names of 18 people given experimental doses of plutonium during the 1940s, apparently without their consent.

The research project first came to light when it was declassified in the 1970s and it drew a flurry of attention in 1986 when Congressional investigators reported that the subjects had apparently not given their informed consent for the experiments.

The plutonium experiments have drawn renewed attention since The Albuquerque Tribune last month reported the names of five of the 18 patients.

None of the subjects is alive

today. O'Leary said the department plans to contact their relatives before releasing their names, possibly next summer.

O'Leary also acknowledged that the department conducted other experiments on some 800 human subjects over the years, a number slightly larger than the 695 human subjects discussed in the 1986 Congressional investigation.

Assistant Secretary of Energy Tara O'Toole said she thinks additional human experiments may also be uncovered in a current inquiry by the department into the experiments.

U.S. Discloses 200 Nuclear Tests, 800 Human Radiation Experiments
By H. JOSEF HEBERT
Associated Press Writer

WASHINGTON (AP) - The government has concealed more than 200 nuclear weapon tests since the 1940s and conducted about 800 radiation tests on humans, some of whom were unaware of the risks, the Energy Department acknowledged Tuesday.

"It left me appalled, shocked and deeply saddened," said Energy Secretary Hazel O'Leary about information she learned only recently that 18 civilians had been injected with highly radioactive plutonium in the 1940s to determine what doses workers might be exposed to safely.

"It is apparent that informed consent could not have taken place," she said. All the individuals are dead, although many of them lived for years after the experiment.

Learning of the plutonium tests "just gave me an ache in my heart," she said.

Launching a new era of openness about the weapons programs, her department released summaries of previously secret information about nuclear tests in Nevada, the amount of plutonium produced and currently located at weapons factories, and limited information about government tests during the 1940s and '50s on humans to determine the health effects of radiation doses.

Mrs. O'Leary said she was personally stunned by information she has received about the human testing, although she said she was prevented by privacy laws - and an ongoing internal review - from disclosing details at this time.

Recently the Albuquerque Tribune reported the testing and identified five of the 18 individuals. Those five persons were injected with plutonium as part of work being done by the Manhattan Project in the 1940s in the development of the first atomic bomb.

Mrs. O'Leary directed that as much information as possible be released, perhaps as early as next June, on the tests involving the 18 people as well as about 800 other radiation tests involving some 600 individuals.

The fact that some tests were done on humans in connection with the government's nuclear program has been known for years, but few details have been available and officials have said the participants always were aware of the potential danger.

Mrs. O'Leary said in the case of the 18 individuals whose cases are being investigated she would not rule out a possible lawsuit against the government by survivors. The last of the 18 died two years ago.

Tara O'Toole, the DOE's assistant secretary for environment, safety and health, said some of the 800 tests on which documents are being assembled were "perfectly legitimate, perfectly valid" but that others - especially those involving plutonium doses - were clearly questionable.

O'Leary said of the plutonium-related tests "the majority of the experiments were clearly below ... the standards of correctness."

Meanwhile, the department said it conducted 204 more underground nuclear tests between 1963 and 1990 at its Nevada test range than previously had been announced, or about one-fifth more than officially acknowledged over the years.

Thirty-four of the tests were concealed in an attempt to keep the Soviets from finding out about them. Nevertheless, the Soviets all along have claimed there have

been 1,080 U.S. tests.

"They were pretty damn close," said Roger Heusser, deputy director of classification at the department. The Soviet surveillance was not always on target, however. In at least two cases, they lodged diplomatic protests of tests when, in fact, none occurred.

Private researchers previously have estimated that there were about 940 U.S. tests.

Other declassified data released Tuesday disclosed that:

-The government since the 1940s produced 102 metric tons of plutonium and that about a third of it (32.5 metric tons) continues to exist in various forms at weapons facilities in Washington state, South Carolina, Colorado, Idaho and New Mexico.

The department did not release plutonium stockpiles at the Pantex weapons plant in Texas, where thousands of warheads are being dismantled, because the number might provide clues as to the number of weapons in the nuclear arsenal.

-About 24 million pounds of mercury is believed to have been used at the Y-12 weapons plant at Oak Ridge, Tenn., but that "incomplete records ... prevent a fully accurate accounting of the quantities received, used, and lost to the environment.

The department previously had estimated that about 750,000 pounds of mercury had been released into the environment at the Oak Ridge plant as part of the weapons production process, much of it into the nearby East Fork of Popular Creek.

O'Leary releases tally of mercury

by Paul Sloca
Oak Ridger staff

Energy Secretary Hazel O'Leary at a press conference today released declassified information regarding the amount of mercury used for weapons production at the Oak Ridge Y-12 Plant but did not release information regarding Y-12's current inventory of highly enriched uranium.

According to Department of Energy information, approximately 24 million pounds of mercury were used at Y-12 for lithium enrichment in a process known as Column Exchange, or Colex.

Very large quantities of mercury were procured for the Colex process in the early 1950s to make the element lithium-6 for use in nuclear weapons and for use in the production of tritium, a radioactive element also used in nuclear weapons.

However, not all the information about mercury operations have been declassified, according to

DOE information.

The quantity of mercury used in the weapons production process at Y-12 puts into perspective declassified information made public in the early 1980s indicating that 750,000 pounds of mercury were released from Y-12 into East Fork Poplar Creek and that a total of 2.4 million pounds was unaccounted for.

Given the figures made public today, a tenth of all the mercury used at Y-12 was unaccounted for.

O'Leary said making the total historical mercury inventory public should give people near the Y-12 some certainty about what was released. She added that there was not enough information to detail exactly where the mercury was released.

DOE's failure to make public the figures regarding Y-12's inventory of highly enriched uranium is due

primarily to concerns about weapons proliferation, but she said the issue will continue to be reviewed for possible future declassification.

O'Leary's press conference was part of DOE's new openness initiative in which more than three miles of declassified documents will be made public. That volume of information would fill up 32 Washington Monuments, O'Leary said.

O'Leary also said detailed information about experimentation with radioactive materials conducted on 18 humans by the Atomic Energy Commission, a DOE predecessor agency, will also be made public.

Some of those experiments were conducted in Oak Ridge, and DOE said the names of the patients involved in the experiments will be made public for the first time pending consent of their families.

According to DOE documents, on April 10, 1945, a man suffering serious injuries from an automobile accident was injected with plutonium in Oak Ridge. He apparently lived for several more years.

O'Leary said at some point she will be in contact with the relatives of all 18 people involved in the plutonium experiments.

Upon learning of the experiments, O'Leary said, she was "shocked and appalled."

O'Leary noted that the secrecy surrounding the AEC and its successor agencies including DOE was necessary during World War II and the Cold War, and added that the time for change and openness is now.

"We were shrouded and clouded by secrecy. It was repressive,"

CONTINUED

DOE chief mum on names

Printed Dec. 7, 1993

By EILEEN WELSON
and KAREN McPHERSON
Staff reporters

Energy Secretary Hazel O'Leary said today she expects some wrongs to be revealed as her agency investigates further a 1940s experiment in which 18 Americans were injected with plutonium.

But O'Leary, at a news conference in Washington, D.C., this morning announcing a "new era of government openness," still declined to identify the families of 13

yet-identified victims.

"We want to do this right because what I suspect we're going to find is some fault," O'Leary said.

"We want to make sure that we make it possible for those who clearly believe they ought to be made whole to have it," she said.

O'Leary, who was appointed a year ago by President Clinton to lead the scandal-plagued Department of Energy, once again said she was appalled and shocked by the experiment.

"It gave me an ache in my gut and in my heart," she said.

In a series of articles in mid-November, The Albuquerque Tribune identified five of the 18 now-deceased Americans injected with plutonium in a top-secret experiment conducted between 1945-47.

Since 1989, the newspaper has sought to learn the identities of the patients through Freedom of Information Act requests. The Department of Energy has stonewalled efforts to obtain the names or medical records of most victims.

"Where we are now is attempting to carefully identify the other unnamed individuals who were subject to those experiments and to now inform their families of

what we know and to get from the families an agreement or non-agreement that we should share those names," O'Leary said.

She said that procedure is required by the Privacy Act as well as by ethical considerations. But according to FOIA guidelines, privacy issues don't exist when a person is dead.

The 18 Americans, who were allegedly terminally ill and injected at some of the nation's most prestigious hospitals, were not informed of the true nature of the experiment, O'Leary confirmed.

"Certainly by today's standards informed consent could not have taken place," she said.

O'Leary also admitted that there was "very little follow up" done on the 18 people.

One of the plutonium injectees, an African-American porter from Italy, Texas, named Elmer Allen, lived until 1991. He received no compensation despite a recommendation in late 1986 by a congressional subcommittee that the DOE's nuclear guinea pigs be compensated.

O'Leary also said she was "constantly reminded" of a remark made by Elmerine Whitfield, Allen's daughter. Whitfield told The Tribune that her father, who had an eighth-grade education, could not have understood the nature of the injection.

"If they told my father that he was injected with plutonium, that would be like telling him he was injected with ice cream," Whitfield has said.

The purpose of the injections, which began in the waning months of the Manhattan Project, was to study the rate at which plutonium was secreted from the human body to help set safety standards for nuclear workers.

Tara O'Toole, the DOE's assistant secretary for the environment, will be working with a world-renowned ethicist named Ruth Faden, a professor at Johns Hopkins University in Baltimore, Md., to determine what information should be made public.

O'Leary conceded that the DOE's new policy of "openness" on nuclear issues might prompt lawsuits from DOE workers or Americans affected by radiation.

"They're free to do what they feel is important. We accept that and can deal with it," she said.

O'Leary, in a brief interview after the news conference, said she could not release more information on the already identified victims.

"My lawyer says I cannot, and I have a healthy respect for invoking lawsuits," she said.

Human guinea pigs still paying for above-ground nuke testing

Nevada Views

By Albert Marquis
Special to the Review-Journal

Stories of moral deprivation, human suffering and government corruption continue to emanate from the Soviet Union. A recent story concerns human beings that were used as guinea pigs in life threatening experiments.

Although the communist government kept this information secret for many years, we now know that one of the primary reasons for above-ground nuclear tests was to test how soldiers would react on a battlefield surrounded by nuclear explosions. Therefore, thousands of men were ordered to dig trenches only a couple of miles from ground zero so they could "experience" a nuclear explosion at close range. They were told there was no need to worry about the radiation: "Just brush the dust off."

Within a few years, many of these soldiers fell ill with various types of diseases. Some began dying, and it wasn't long before every one of them was faced with some form of life-threatening, cancer-related disease. These soldiers were fortunate to find a couple of attorneys who were brave enough to face the communist government, and unselfish enough to take on a case for which they might never receive payment.

In response, the communist government denied any liability whatsoever. The government's principle argument was that the soldiers could not prove that the nuclear tests had caused the cancer. They asserted every legal technicality in an effort to have the cases thrown out of the court.

But after 14 years, the cases were set to go to trial. The government asked for another delay, but the judge refused. The government then said it intended to call 58 expert witnesses who, for a fee, would testify that in their opinion there was no scientific evi-

dence that could scientifically link the cancers with the nuclear tests.

About the same time, one of the government attorneys filed a motion to dismiss one of the soldier's claims on the basis that the statute of limitations had expired. The government attorney argued that this particular soldier began to get sick 10 years before his lawsuit was filed. "He should have realized," argued the government, "that his illness was caused by the tests." The court was asked to throw the case out on the basis that the soldier did not file his claim within two years after he became ill.

Of course, the communist government has no qualms about taking such inconsistent positions. On the one hand, they intend to call 58 "experts" who will say that the nuclear test did not cause the cancer. On the other hand, they argued that this particular soldier who was sick from cancer, who did not have a medical degree or other training, who did not have the funds to retain physicians or other experts, and who did not even have the financial ability to retain a lawyer, should have known that nuclear tests caused his cancer and that he had two years from that moment of realization within which to file a lawsuit. Of course, it is not surprising that such a position would be taken by a corrupt government that ordered the soldiers to expose themselves to the deadly radiation and later denied all responsibility.

But wait! I just found something in my notes. This story is not about Russia at all. It is about the United States. Our own country. I can't believe it.

The case is now pending in federal court here in Las Vegas. It is a 14-year-old lawsuit brought by government workers who are dying from cancer and the widows of those who have already died. The Las Vegas attorneys who have been fighting this battle without compensation all of these years are Alan and Larry Johns.

*"Within a few years,
many of these soldiers
fell ill with various
types of diseases."*

The trial is set for Monday. Only six representative cases will be tried in court. Of those six, Keith Prescott is the only government worker who is still living. That is the case that the government wants thrown out. It wants to get rid of the only case where the plaintiff is still alive.

With all of the waste we have in government, and in light of the hundreds of millions of dollars that were spent on nuclear testing, how can our country refuse to compensate wives who lost their husbands and children who lost their fathers? And in light of the government's refusal to accept responsibility for injuries caused by nuclear testing, how can anyone in their right mind argue that we should resume testing? This is madness. We should force our government to accept responsibility and to compensate those who have suffered for so long.

Albert Marquis, a local attorney, is a frequent contributor to these pages.

Jon Raiston is on vacation. His free-lance column will return Tuesday.

The Albuquerque Tribune

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DOE finds records on secret research

■ The Energy Department has found documents related to a 1940s plutonium experiment and has asked an independent agency to determine which records should be released.

By EILEEN WELSHOME

Staff reporter

The Department of Energy has found several boxes of documents related to a 1940s plutonium experiment and intends to release as many as possible after the records are reviewed by experts outside the DOE, a spokesman said.

In a series published Nov. 15-17, The Tribune identified and described the lives of five of the 18

Americans who unwittingly were injected with plutonium at the dawn of the Atomic Age. Many of their relatives still had no knowledge that their loved ones had been used.

Los Alamos National Laboratory played a key role in the first phase of the project.

Mary Freeman, a DOE spokeswoman in Washington, D.C., said this week several boxes

of documents related to the experiment have been forwarded to the Office of Environment, Safety and Health.

That office, in turn, will develop a proposal for Energy Secretary Hazel O'Leary for an independent review of the records, she said.

"Rather than have DOE people look through the documents, we want the whole process to be objective," Freeman said.

For the last four years, The Tribune has been

REPRINTS

If you missed The Plutonium Experiment in The Tribune, you still can find out about the horror that some say rivals Nazi concentration camp experiments. Send \$1 per reprint package to 7777 Jefferson N.E., Albuquerque 87109. Include name and address.

The Albuquerque Tribune
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DOE From A1

Freedom of Information Act requests filed with the DOE.

While the Energy Department has released some documents, it has refused to release medical files or documents that would reveal the identities of most of the patients.

In October, more than a year after a second FOIA request was filed by the newspaper's attorneys, the DOE released letters identifying one patient, an African-American railroad porter from Italy, Texas, named Elmer Allen. But The Tribune already had uncovered Allen's identity.

Freeman did not respond directly when asked why the DOE had just located documents the newspaper has sought for four years.

"It's such an old program. There's nobody around now who has any ownership of it," she said.

"These are old, old documents. None of the people around today was involved in this," she said.

O'Leary last week said she was appalled by the experiment and intended to make as many documents as possible public about the project.

The Tribune has received inquiries on the experiment from media throughout the United States and Japan.

O'Leary and Freeman said there might be restrictions on what's made public because of classification issues, privacy considerations or any other laws that would prohibit the release of the records.

"Whatever we can release, we will release," Freeman said.

The DOE has been criticized frequently for its alleged violations of the Freedom of Information Act.

"Dealing with the government is difficult. Dealing with the DOE is especially difficult," said Stanford University historian Barton Bernstein, who files hundreds of information requests each year with various government agencies.

Stewart Udall, a former secretary of the Interior who lives in Santa Fe and is just completing a book on the nuclear era, said the promised release of records on the plutonium experiment is a good test for the Clinton administration.

"The Clinton administration promised to be more open. Is this talk, or are they really going to pull back the curtains and let reporters and the public see what's there?" he asked.

BOOKS 11-26

REVIEW: Hanford History Is a Scary Story

By DOUG ESSER

Associated Press Writer

Malformed lambs, sterile men and women, people with scars on their necks where their thyroid glands were removed, and the "death map" marking cancer deaths among the neighbors of the Hanford nuclear reservation.

Michael D'Antonio's "Atomic Harvest" (Crown, \$22.50) is a scary story.

The book recounts how radioactive discharges and leaks imperiled the health of Hanford workers and neighbors in Eastern Washington. It's become the nation's most polluted nuclear site. In 1989, the state and federal governments agreed on a 30-year deadline for cleaning up Hanford. Costs were estimated at \$57 billion.

What passed in decades of newspaper headlines, D'Antonio retells like a TV docudrama.

It's a compelling narrative that turns real people into characters: farmer Tom Bailie, who fights the government to discover the secrets of radioactive emissions he thinks caused his health problems; relentless Spokane Spokesman-Review reporter Karen Dorn Steele, whose digging forces the government to admit its mistakes; and stubborn safety auditor Casey Ruud, who refuses to compromise.

Corporate and government bureaucrats are easily cast as intransigent or ineffectual leaders.

The technique of focusing on people ill-treated by Hanford frames the debate about nuclear technology in moral and political terms rather than in a historic or scientific perspective.

Hanford is a 560-square-mile federal reservation near Washington's Tri-Cities of Richland, Pasco and Kennewick. The government took the land during World War II for the Manhattan Project, which built the first atomic weapons. The plutonium for the Fat Man bomb dropped at Nagasaki was produced at Hanford's B reactor.

For more than 40 years, through the Cold War, Hanford factories continued to produce fuel for the weapons that give the world nightmares. Hanford operated in secrecy. Workers and neighbors who lived downwind were told it was safe. Now, it appears, it wasn't.

Hanford is the most polluted nuclear site in the nation and an example of problems the Department of Energy faces at all of its facilities.

The underlying belief in "Atomic Harvest" is that people cannot manage nuclear technology and it is wrong to inflict the risks on workers and downwinders.

The luxury of indulging in the 1990s' loss of faith in progress D'Antonio acknowledges in passing. He even mentions how anti-nuclear activists used the sociology of victimization to gain political leverage. But "Atomic Harvest" is not an even-handed history of Hanford.

D'Antonio's sympathies lie with the Hanford Education Action League and other opponents. Supporters such as the Hanford Family are worse than politically incorrect for keeping faith in nuclear technology, just as they cling to the "Bombers" as the team name for Richland High School.

The real scary part of D'Antonio's tale is the abuse of power by the government. The can-do attitude that won the race to build the first nuclear weapons became an arrogance to ignore some safety

rules; workers eventually became "Hanfordized." The secrecy that began as national security became a government-knows-best excuse for withholding information from nearby residents or lying to them.

For anyone who has heard about Hanford one headline at a time, "Atomic Harvest" is a readable way to put it all together. The index makes it valuable as a reference.

[qen??]

EDITORIAL

Printed Nov. 23, 1993

SET EXPERIMENT RECORDS FREE

Elmer Allen, the Pullman porter, Albert Stevens, the painter, and Eda Schultz Carlton, the homemaker who worried so about cancer, are buried now. And nearly 50 years have passed since they and 15 others were injected with plutonium as unwitting human guinea pigs in a secret government experiment.

But the wrongs done to them, detailed in a three-part series last week by Tribune reporter Eileen Welsome, "The Plutonium Experiment," are not laid to rest.

The matter will continue to stir uneasily until the federal government stops its stonewalling, opens its records and willingly tells the full story of these unfortunate subjects.

The government and its agents, who are supposed to represent you and me, deceived these humble folks. Researchers, anxious to see how much plutonium would remain inside people who had been exposed, did not inform any patient fully of the experiment. They concealed the nature of the powerful toxin they were injecting. One family thought the test was a special "treatment."

The deception continued for decades as agents of the popular will — including physicians — repeatedly examined patients without revealing the secret.

One physician, Dr. Christine Waterhouse, was unsure she ever told the whole story to her patients, even after the feds said they deserved to know. She and many others argued it would be better not to clue patients in, lest they become upset.

Many living relatives, shocked, said they had no idea what had happened to their loved ones until contacted by The Tribune. Even after the patients' deaths, government agents deceived survivors while getting permission to exhume the bodies for further studies.

Worse, the deceit continues.

The feds have been hiding records with ferocious tenacity. The Department of Energy still refuses to reveal the identities of the subjects of the plutonium experiment. It

has taken The Trib, a highly aggressive institution with the financial resources and skills to conduct the search, four years to overcome the resistance and learn the stories of just five of the patients.

The deception is wrong, and it must end.

It is wrong because the experiment was done in the public's name, using public resources, and the public has a right to a full understanding of what happened.

It is wrong because plutonium no longer is a Cold War secret. Concealing its effects no longer thwarts our enemies. It only protects agencies and people — many long dead — who deserve scrutiny.

It is wrong because it fails to honor properly the sacrifices these experimental subjects made for their country. Whether it was good or bad science — arguments have been made on both sides — the feds continue to use this research to help monitor and protect people who work with nuclear materials. That merits public acclaim.

Most importantly, it is wrong because it is un-American.

A nation that believes so profoundly in the worth and rights of the individual cannot brook a government that hoodwinks its citizens, that refuses to give them the information they need to make fully informed decisions, that diminishes them as ends in themselves and uses them as means to its own ends. All-the-more shameful is it that these citizens were ill, vulnerable and subjected to grave harm with no known benefits.

Justice demands that the DOE quit stalling and release all information related to the infamous experiment.

U.S. Energy Secretary Hazel O'Leary, to her credit, said last week she's "appalled" by the experiment and will work to release records. Unfortunately, she hedges her commitment, saying that "as an old lawyer" she's got to be cautious, to pick and choose, to look out for lawsuits.

Baloney. Look at the damage the grudging approach has done to date.

EDITORIAL

Printed Nov. 22, 1993

THE EXPERIMENT WAS WRONG

"They shouldn't have done it, but they did," Augustus McCrae said softly, again and again, to a sobbing Lorena Wood in the original TV movie "Lonesome Dove." He was comforting her after she had been kidnapped and gang raped repeatedly.

The families and victims of the infamous government plutonium experiment deserve much the same comfort.

Researchers shouldn't have sought out and injected 18 patients with plutonium some 50 years ago to learn how much of the highly toxic, cancer-causing substance remains inside a person exposed to it.

But they did, as Tribune writer Eileen Welsome detailed last week in the series, "The Plutonium Experiment."

They shouldn't have duped patients by not disclosing fully what they were in for.

But they did.

They shouldn't have carried on the deception for decades — more than a lifetime for some victims and their families.

But they did.

They shouldn't have picked people who were about to die, thinking this somehow made any harm the experiment caused more justifiable.

But they did.

The experiment was wrong, through and through.

At the crux of the error is a lack of respect for the individual, a respect critical in medical practice today and in a democracy based on individual rights.

It is highly disrespectful to risk hurting patients in an experiment that brings them to known benefits. It is even worse to do so without making it perfectly clear what's coming and why. Patients who lack a full measure of understanding cannot make informed decisions about experiments. Their autonomy is dismissed. They become victims of, not participants in, the research.

It is disrespectful to pick sick people to test, figuring they're going to die anyway. A sick — or old, or retarded, or poor — person's life is no less valuable intrinsically than anyone else's.

It is appalling for physicians, who have an ancient charge to protect life, to participate in experiments that assault life. Yet participate they did. Worse, their patients were ill and

vulnerable and deserved special protection — not the betrayal they got.

It is intolerably disrespectful for the powerful American government to demean its citizens so. Here, government is supposed to take great pains to remember who serves whom, lest we return to the days when King George III lorded it over his subjects. Duping and abusing patients is not the American way.

Many involved in the plutonium experiment believed they were being patriotic and humane. Plutonium was top-secret and little-understood. The Cold War had begun and word of the radioactive element couldn't be allowed to escape. Many, though not all, of the patients received good medical care for free.

Still, evidence shows that researchers should have known better. The Nuremberg trials of Nazi war criminals were helping to establish new, respectful guidelines for research on human subjects. Some researchers and government agencies expressed misgivings about the experiment even before it was conducted.

Today, things are supposed to be different. Medical review boards check out patient research agreements. Stringent guidelines for informed consent must be followed. Patients are supposed to get more respect.

But not all issues are settled.

In the news lately are stories about cloning and other experimentation with human embryos. And of having babies to harvest their organs for various purposes. And of using tissues of aborted fetuses for everything from cosmetics to cures. And of doctors aiding the elderly, the ill — maybe even the depressed — to commit suicide.

In each case discomfiting questions are raised about whether researchers, physicians, even parents, adequately respect human life and individual autonomy.

We feel about each of these cases the way we feel about the plutonium experiment: that the medical/research establishment is surging ahead without answering the questions. They should be answered — in a way that best enhances respect for people, especially the weak and the vulnerable.

No more having to say "They shouldn't have done it, but they did."

FOLLOW-UP ARTICLES

DOE boss: Experiment appalling

Printed Nov. 19, 1993

By KAREN MACPHERSON
and EILEEN WELSOME
Staff reporters

WASHINGTON - U.S. Energy Secretary Hazel O'Leary today said she was "appalled" by an experiment in which 18 Americans were injected with plutonium in the late 1940s by researchers working for DOE's predecessors.

"This is nothing that I would support or countenance as a mother, as a human being, as the leader of an agency," she said.

O'Leary was responding to a series of copyright articles that ran this week in The Albuquerque Tribune in which the stories of five of the victims were told.

O'Leary said she plans to release as many documents as possible related to this experiment. In an interview this morning, O'Leary said she is meeting DOE's top lawyer today to determine what documents can be released about the 18 people.

The Albuquerque Tribune in 1989 filed its first Freedom of Information Act with the DOE for all documents related to the experiment. A second request was filed in August 1992 by The Tribune's attorneys.

The Energy Department stonewalled the newspaper's efforts to obtain medical files and other documents that would identify the patients. In October, the DOE released records that included the name of one patient - Elmer Allen, a railroad porter from Texas - whom the newspaper had discovered on its own more than a year earlier.

Reached at a public speaking event today, O'Leary said she found the experiment "repugnant." The DOE is not "attempting to hide anything," she said.

"We'll just make as much public as we are allowed to," she said. She intends to make a "clear public pronouncement" on the issue, she said.

O'Leary plans to bring in a "disinterested third party" from outside DOE to examine the documents, to tell the U.S. public what occurred and to make recommendations on what steps the agency should take next.

Today, members of New Mexico's congressional delegation expressed shock and horror at the experiment. Several said they intended to ask DOE for a complete report.

"I'm astounded that such experiments may have occurred in the United States," said U.S. Rep. Steve Schiff.

"I am going to push that the Department of Energy release a full accounting on this matter." He also said he would demand an explanation from DOE of what compen-

satory action it is considering regarding the families of the experiment's victims.

U.S. Sen. Jeff Bingaman said he was appalled. "It's an unbelievable story, quite frankly, to think that we would have a program that used human beings to experiment in this way."

U.S. Rep. Joe Skeen found the story ghoulish. "In my mind, it's almost unbelievable. Why wouldn't they use lab animals? This is not Buchenwald." Buchenwald was an infamous Nazi death camp.

Sen. Pete Domenici today said: "We will undoubtedly discover instances in which the drive to prevail during the dark days of

the Cold War led to actions that are unacceptable when seen in light of today."

O'Leary's promise to make an accounting of the plutonium experiment to the American people was a departure from past DOE attitudes toward The Tribune's inquiries into this matter.

O'Leary said the department is beginning its search for records on the 18 victims, noting that the documents "are having to be taken out of a warehouse."

But O'Leary said that, "as an old lawyer," she feels the department must be cautious about what documents are released, and how they are released.

"One has to always worry about lawsuits and the need to keep the records intact," she said. The department's top lawyer, Robert Nordhaus, has consulted with the U.S. Justice Department on release of the documents.

"I want to be clear to you that all that I read doesn't tell me that the whole thing was awful," O'Leary added.

"But many things that appear to have occurred are simply - they don't represent anything that moral human beings could stand for. That's number one. We've got to separate the wheat from the chaff, and I'm not in a position to do that."

The Plutonium Experiment

Americans recoiled when the Nazis conducted brutal experiments on humans. But as the world was learning of those horrors, U.S. scientists injected plutonium into 18 people without their informed consent to see how the element that fuels atomic bombs reacts in the body. The identities of these human guinea pigs were hidden for almost 50 years.

Until now.

BY EILEEN WELSOME

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CONTINUED

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The Plutonium Experiment

The experiment began in the hot, fretful dawn of the Atomic Age in quiet hospitals far removed from the New Mexico desert where scientists were putting the finishing touches on a "gadget" that would alter the course of history.

In the wards of the sick and dying, syringes were loaded with an ingredient so secret it was known only as "the product." Then, in quick succession, the needles were plunged into the veins of an auto accident victim in Tennessee, a cancer patient in Chicago, a house painter in San Francisco.

The product was plutonium, the highly radioactive substance that would power the brilliant mushroom cloud over Alamogordo three months later. But what did plutonium — the ingredient in a weapon that President Truman would boast harnessed the power of the universe — do in the human body? How long did it circulate in the blood? Where did it lodge in the bone? How quickly was it excreted?

The experiment was approved by the U.S. Army's Manhattan Project, the wartime machine that developed the atomic bomb. Some contemporary scientists compare the project to the human experiments conducted in Nazi Germany. Others defend it.

In all, scientists injected 18 people with plutonium between 1945 and 1947. Even as the plutonium was being administered, the Army colonel listed in documents as primarily responsible for the experiment was describing plutonium as the "most poisonous chemical known."

The patients were ordinary people with one thing in common: life-threatening illnesses that made survival beyond 10 years "highly improbable." They included a boy of slight build who was just two months shy of his fifth birthday, a malnourished alcoholic, an 85-pound woman suffering from widespread cancer.

With the possible exception of one patient, The Tribune found no written evidence that any of the patients were informed of the nature of the experiment or gave consent. Most of them probably went to their graves not knowing they had been injected with one of the most potent cancer-producing chemicals on Earth.

One patient received "many times the so-called lethal textbook dose" of plutonium. That patient and five others received radiation doses to the bone that a scientist 30 years later calculated as being high enough to cause tumors.

One-third of the patients outlived their doctors' grim predictions, and in the early 1970s, four still were living when a follow-up study began. Scientists took urine, blood and stool samples from three to measure the plutonium remaining in their bodies. Scientists also sought exhumations of deceased patients.

Neither the survivors nor the relatives of the deceased plutonium patients initially were told the real reason for the government's interest. In some cases, the relatives were lied to when permission for exhumation was sought.

"This is one of the great, dark stories of the nuclear era," said Arjun Makhijani, president of the Institute for Energy and Environmental Research in Washington, D.C., a non-profit group that studies nuclear issues. "The public is not aware of the depths to which many universities, doctors and scientists descended."

Los Alamos National Laboratory played a major role in the experiment's first phase. The lab analyzed the excretion samples of the patients injected in a Rochester, N.Y., hospital and later published a classified report that has become the definitive source document on the experiment.

The data, some scientists say, helped protect thousands of workers at nuclear facilities from being overexposed to plutonium and did not harm the patients or contribute to their deaths. Others say the experiment was unethical and bad science because, among other reasons, the sample size was too small.

The experiment itself has received limited attention in the media. But to this day, the patients' identities have been known by numbers only.

Six years ago, The Tribune began a search to find them. We thought they deserved to be remembered as something more than numbers, something more than laboratory animals who contributed to science a wealth of data on how plutonium is deposited in the human body — its heart, skeleton, even its

ashes.

Working with scant data from scientific reports and a few clues from government documents, we determined the identities of five of the 18 patients.

In the next few days, The Tribune will tell you how these ordinary Americans unwittingly were swept up by the hot winds of the Atomic Age. We also will tell you about how their families weren't told the truth for almost 50 years.

The first patient we found was a railroad porter named Elmer Allen, identified in records as "Cal-3." Elmer was injected with plutonium in the left calf, and three days later, his leg was amputated for what was thought to be a pre-existing bone cancer.

The second patient was a California house painter named Albert Stevens, known as "Cal-1." Albert received a massive dose of plutonium four days before undergoing surgery for stomach cancer. But he didn't have stomach cancer. Specimens of his spleen, rib and body tissues later show up in a report titled "A Comparison of the Metabolism of Plutonium in Man and the Rat."

The third patient was "HP-6," a man named John Mousso who suffered from Addison's disease and struggled to make ends meet in a small town outside Rochester, N.Y.

The fourth was Eda Schultz Charlton, identified as "HP-3" in official records. Eda's condition was monitored for almost 35 years by the University of Rochester's Strong Memorial Hospital. She underwent dozens of diagnostic tests ranging from X-rays to biopsies and barium enemas, and she developed an obsessive fear of cancer.

And finally, there was "HP-9," a man named Fred C. Sours, a political official in a Rochester suburb whose body was exhumed 31 years after his death and sent to a national laboratory near Chicago. His remains were kept there for more than three years.

Who are the others? The malnourished alcoholic? The auto accident victim in Tennessee?

We don't know. And the government won't say.

We've filed two legal requests under the Freedom of Information Act with the Department of Energy, the sprawling agency that eventually took over many functions of the wartime Manhattan Project.

The first was filed in 1989. The second, filed more than a year ago, was a seven-page request based on the DOE's own documents — including a 1974 report detailing an internal inquiry into the experiment conducted by its predecessor agency, the Atomic Energy Commission.

We've received some documents from the DOE, but it is still withholding many of the most important records, such as medical files and other correspondence that would identify the other patients. The DOE said it doesn't even have a copy of the findings of its own investigation — an investigation that involved teams of officials who reviewed numerous records, conducted interviews with scientists in 14 cities and returned to Washington with 250 documents.

The plutonium experiment began in the hubris of a new age. Among its advocates and architects were some of the brilliant young scientists from Los Alamos who, from behind protective lenses, watched on the morning of July 16, 1945, when a man-made explosion outshone the New Mexico sun.

A half century has elapsed. The Cold War is over, and the bombs are being dismantled. Still, the DOE refuses to relinquish the identities of the victims of one of its darkest secrets.

"This is one of the great, dark stories of the nuclear era. The public is not aware of the depths to which many universities, doctors and scientists descended."

Arjun Makhijani

Institute for Energy and Environmental Research

.....Washington, D.C.

ELMER ALLEN

Elmer and Fredna's relationship began in the turmoil of World War II, and the fallout from that war was to cloud their lives forever.

At 3:30 p.m. on July 18, 1947, doctors in a San Francisco hospital gathered around a patient's bed and explained an experiment they were about to perform. The patient, a railroad porter with an eighth-grade education, nodded his assent. Doctors later would describe him as "fully oriented and in sane mind."

A bull's-eye was drawn in ink on the hard, smooth calf of the man's left leg. A hypodermic needle loaded with plutonium, a silvery, man-made metal considered one of the most toxic substances on Earth, was plunged into the center. The needle sank nearly an inch. There was no bleeding when it was withdrawn and no pain or discomfort "whatsoever" 6 1/2 hours later.

Three days later the left leg was amputated at midthigh for what was believed to be a pre-existing bone cancer. Tissue samples were sent to a laboratory where researchers conducting a secret experiment were eager to find out how, among other things, plutonium distributed itself in the human body.

The patient was Elmer Allen. He was the 18th and last person to be injected with plutonium in an experiment conducted between 1945 and 1947.

Elmer, who was 36 at the time, returned with his wife to her small hometown of Italy, Texas, where a bleak future awaited him. He would suffer epileptic seizures, alcoholism and eventually be diagnosed as paranoid schizophrenic — a mental illness his family doctor said centered partly on his feelings about how he had been used.

■ ■ ■

It was the summer of 1944 when Fredna Hadley met a strapping young porter named Elmer Allen in a West Texas train station. It was a romantic beginning in an era of romance — a time of sad farewells and sweet homecomings in a democracy caught up in a global war.

Fredna, a young graduate of Tillotson College in Austin, Texas, was in the El Paso train station waiting for the train that would take her to Los Angeles to see her aunt.

"People were pushing to get on the train. This woman had some children, a little baby in her arms and two small children. I stepped back and let her go in front of me, and they closed the gates," Fredna recalled.

She began to cry. Elmer, a porter for the Pullman Co., noticed her distress.

CONTINUED

"I can get you on the next train," he said.

Their love affair began. Not long after that, Elmer followed Fredna to her hometown of Italy, Texas, a small farming community 45 miles south of Dallas.

After a brief courtship, Elmer and Fredna were married on Sept. 10, 1944. They moved to Oakland, Calif., and later to nearby Richmond. Their first child, Elmerine, was born a year later. A second child, William, was born two years after that.

Elmer continued his work as a railroad porter while Fredna worked as an aide in a health clinic. Like Texas, the postwar Bay area was still segregated, but the African-American couple felt happy to be working. "We were optimistic about the future," Fredna recalled.

But an accident occurred on Sept. 3, 1946, a minor accident really, which would set in motion events that would forever alter their lives. Elmer was trying to get off a train in Chicago when it jolted and threw him to the side, injuring his left knee.

When he got back to Oakland, a company doctor took an X-ray. The film revealed a fracture. Elmer was advised to wrap the knee in an Ace bandage and apply heat, but that didn't help. He was referred to another doctor.

A second X-ray showed a lesion in the knee area had grown. A biopsy was done. The pathologist found no evidence of abnormal growth or tumor. "The principal picture is that of newly forming bone, organizing hemorrhage and chronic inflammation," he said.

Elmer was unable to work and the Pullman Co. refused to accept liability for the accident, saying the injury didn't appear to be "on a traumatic basis." He couldn't afford further treatment and was referred in June 1947 — almost a year later — to the outpatient clinic at the University of California Hospital in San Francisco.

By then, Elmer's physical and financial situation was desperate. His knee had swollen to three or four times its original size and was so tender he couldn't put weight on it. He was taking pain medication and had been out of work for six months. According to a hospital application form, Elmer had \$60 in debts and \$25

in cash. (His rent alone was \$35 a month.)

Elmer's diagnosis worsened, and he later was admitted to the San Francisco hospital. His medical records show the following:

• June 25, 1947. A doctor examining one set of X-rays suggests the changes in Elmer's knee could stem from an infection superimposed on a surgical defect, but he says the possibility of bone cancer "must be seriously considered."

• July 3, 1947. The doctor examining the June 25 X-rays does another set and reverses his opinion. Elmer, he said, "probably" has a cancer in the cartilage or bone. He doesn't rule out infection.

• July 14, 1947. The hospital's pathology department does a second biopsy. Elmer definitely has a form of bone cancer, a pathologist said.

The doctors decided the only way to prevent the spread of bone cancer through his body was to amputate his leg, a treatment still used today. Bone cancer is a rare disease that is usually fatal by the time it is diagnosed. Eighty percent to 95 percent of patients who have it die within five years of its discovery.

The days and weeks after Elmer's amputation are a blur in Fredna's mind. What she remembers most is how scared she was — two babies to support and a husband with an amputated leg.

"I was so far away from my people," she said.

They were both far from home and about to be hurled into a more alien world — an experiment conducted by scientists of the Manhattan Project, which produced the atom bomb.

■ ■ ■

While scientists at Los Alamos National Laboratory were designing the bomb itself, other research was being done at the Metallurgical Laboratory at the University of Chicago, the William H. Crocker Radiation Laboratory at the University of California in Berkeley and other labs.

Much of the health and safety research centered on new, radioactive elements that were capable of sustaining a nuclear chain reaction. Of great interest was plutonium, named after the planet Pluto.

"It really should have been called 'plutonium,'" Glenn Seaborg, a co-discoverer of plutonium and Nobel laureate, said from his Bay area home. "But we liked how 'plutonium' rolled off the tongue."

Plutonium was discovered in 1941 on the University of California campus in Berkeley. Plutonium 239 has a half-life of 24,065 years, the time it takes for half of its radioactive atoms to decay.

The military potential of plutonium, a material so secret that it was referred to during the war years as "the product," was recognized. Scores of young scientists recruited into the secret Manhattan Project went to work, trying to figure out how to manufacture plutonium and other radioactive isotopes in large enough quantities to be harnessed into an atomic bomb.

By the fall of 1942, enough plutonium had been made to be visible to the naked eye. As the amount of plutonium increased, so did concern over its toxicity.

In 1944 — a year before the human experiments were to begin — 11

milligrams of plutonium (about the size of the head of a pin) were set aside for animal studies by physician and researcher Joseph Hamilton at UC-Berkeley. Col. Stafford Warren, the chief medical officer of the Manhattan Project who authorized the experiment, described plutonium in 1946 as the "most poisonous chemical known."

Plutonium had properties similar to the radioactive element radium. The human toll wreaked by radium was well-documented, and the federal government wanted to avoid a similar tragedy in its laboratories.

Young women who had worked in factories painting luminous figures on watch dials with radium-laced paint in the 1920s were developing cancer. It was discovered that many had swallowed lethal amounts of radium when licking their paint brushes.

Unlike radium, which decayed to radon and could be detected in the breath, the only way to measure plutonium in the body was through urine and stools. And the only way to extrapolate how much plutonium a person may have been exposed to, researchers figured, was through an experiment in which a known amount of plutonium would be introduced into the body and carefully measured in the urine and stools.

"Studies conducted on man involving the introduction of known quantities of the element into the human body were viewed as the only solution to the problem," states a report by the Atomic Energy Commission, which investigated the experiment in 1974.

The injections began in 1945, just three months before J. Robert Oppenheimer watched the atomic bomb near Alamogordo and recalled an ancient Hindu quotation: "I am become Death, the destroyer of worlds."

The first patient, injected on April 10, 1945, was an African-American suffering from severe auto injuries and hospitalized at the Manhattan Engineer District Hospital in Oak Ridge, Tenn. The patient walked out of the hospital several weeks

Hospital in San Francisco; and the remaining 11 patients were injected at Strong Memorial Hospital, the teaching hospital of the University of Rochester in upstate New York.

Wright Langham, a group leader in radiobiology at Los Alamos, went to Rochester to help coordinate the experiment on the 11 Rochester patients. Langham, who was later known as "Mr. Plutonium," may have escorted the numerous samples shipped back to New Mexico by train. Los Alamos did the chemical analyses of the urine, stool, blood and tissue samples taken from patients.

Scientists were looking for patients suffering from chronic diseases that made survival for more than 10 years unlikely. Two reasons lay behind this thinking, one humane and one utilitarian:

First, they wanted to avoid the possibility of radiation effects, such as cancer, showing up later in life. Second, early death improved the chances of obtaining what a Los Alamos report called "post-mortem material" — body parts.

Livers, spleens, gonads, kidneys, hearts, ribs, intestines — virtually every organ — would be harvested and measured for plutonium in patients who died soon after the injections.

Three patients were African-American, and 15 were White. Five — including Elmer, Albert Stevens, John Mousso and Eda Schultz Charlton — lived for more than 20 years after the injections.

That alone is reason to condemn the project, some scientists say. "I find that when people play God, when they find somebody's terminal and therefore it's all right to do something to them you wouldn't do to other people, I find that rather obnoxious," said Berkeley scientist John Gofman, considered one of the world's leading experts on low-level radiation.

Had they lived 50 years, the plutonium patients would have received an average of 44 times the radiation the average person receives in a lifetime from background and medical X-rays. But three patients received much more.

Elmer received the smallest dose, but he received plutonium 238, a "hotter" form that is more unstable and more radioactive than plutonium 239. About half remained in the amputated leg, giving Elmer about six times the radiation the average person today receives in a lifetime.

Scientists today disagree on whether the plutonium would have increased the patients' pain, worsened their conditions or hastened their deaths. "I think any of these exposures could cause excruciating pain in the person who would suffer the consequences," health physicist Morgan said.

But Roland Finston, a health physicist who just retired from Stanford University and helped The Tribune calculate the radiation doses, said it's unlikely the doses would have caused any immediate acute effects. The real danger, he said, would have been the development of leukemia or solid tumors in later life. "It would not have caused any measurable effect on the patients at the time or shortly thereafter," he said.

The government said later deaths were unrelated to the plutonium injections and said there was no evidence to suggest the plutonium influenced the patients' diseases or caused cancer.

"The observation that cancer did not, apparently, develop in any of these 18 injected patients does not mean that the

doses given were too small to cause cancer," said John C. Cobb, a retired physician living in Corrales. "The plutonium may indeed have caused a cancer to start in any, or all, of these patients, but the patients' own immune systems could have eliminated the cancer cells."

Cobb is a former chairman of the University of Colorado's department of preventative medicine and served on a governor's task force that looked at health effects from plutonium and other problems at Colorado's Rocky Flats nuclear weapons plant.

Cobb said plutonium's irradiation of the bone marrow also could have damaged the patients' immune systems and made them more susceptible to diseases. "Immune deficiency can contribute to a great variety of symptoms," he said.

■ ■ ■

Many years later, when Elmer was back in Italy, Texas, he would tell his old friend Joe Speed about the doctors who raced in and out of his hospital room the summer his leg was amputated.

"They were practicing to be doctors," Speed recalled. "They were students. Different young men would come in, telling him to do this and that."

"It really should have been called 'plutium.' But we liked how 'plutonium' rolled off the tongue."

Glenn Seaborg
Co-discoverer of plutonium

later, giving rise to a long-held belief by some researchers that the plutonium actually had promoted a rapid healing of the bones. "They gave him a whopping dose of plutonium," recalled Karl Morgan, the former director of Oak Ridge's health physics division. "They were surprised a Black man who had been scheduled to die had walked out of the hospital and disappeared."

Three patients were injected at Billings Hospital at the University of Chicago; three patients, including Elmer, were injected at the University of California

HOW WE FOUND ELMER

A small town listed in a government record provided the clue we needed to find Elmer Allen.

A 1973 Department of Energy document received under the Freedom of Information Act mentions a letter written to the physician of "CAL-3" in Italy, Texas. If the physician was in Italy, Texas, maybe the patient lived there, too.

Perhaps someone in Italy, a small town south of Dallas, would know the identity of "CAL-3" if we were to describe what we knew about him: an African-American man about 80 years old whose left leg had been amputated years ago.

We called Italy's City Hall in 1992. Elmer Allen was the man we were looking for, they told us, but he died a year ago. "Do you want his wife's number?" they asked.

We met with Elmer's wife, Fredna, and his daughter, Elmerine Whitfield, in July 1992. Everything matched — names, dates, places. Fredna even had an itinerary of the trip they took in 1973 for a follow-up study. The dates matched government documents.

Although Elmer told his family doctor and a good friend about the injection, the news shocked Fredna and Elmerine. It was particularly

hard for Fredna, a soft-spoken woman of 77.

Elmer lived for 44 years after he was injected with plutonium. When we visited, the grass had not yet grown over his grave. A small metal plate, which will be replaced with a double tombstone, is etched with his birth and death dates: Jan. 20, 1911, to June 30, 1991.

"It doesn't make me angry," Fredna said. "It just gives me a better view of accepting what people say and how they will do you when they feel like you don't know any better."

But Elmerine feels a different way. "I'm angry. I'm very upset. But being African-American, I stay angry about a lot of things. I just wish this had come out before my dad passed away so we could do something more about it."

Fredna helped put together the story of her husband's life. She gave the family doctor permission to speak with us and authorized The Tribune to obtain Elmer's medical records from the University of California Hospital in San Francisco.

Those records included written documentation showing Elmer's purported consent for the injection and the proof he was the patient who, for nearly 50 years, was known only as "CAL-3."

"He told me they put a germ cancer in his leg. They guinea-pigged him. They didn't care about him getting well. He told me he would never get well."

Doctors at the clinic were immediately interested in Elmer. "Of great teaching value," a medical official wrote on Elmer's chart after an early visit.

Patricia Durbin, a scientist at Lawrence Berkeley Laboratory in California, said the patient selection was both "personalized and random."

"The bulk of the people were just people," she said.

Durbin was in a second generation of scientists who "rediscovered" the plutonium experiment and lobbied in the early '70s for follow-up studies. In 1946, she was a young student working in the lab of scientist Joseph Hamilton, one of the experiment's architects.

"They were always on the lookout for somebody who had some kind of terminal disease who was going to undergo an amputation," Durbin said. "There are not very many of them. But they had colleagues at UC-San Francisco and San Francisco General who were kind of on the alert for potential cases."

About a month before Elmer was admitted to the hospital, a Chinese boy described in documents as "CAL-A," underwent a similar injection and amputation. The 16-year-old boy was injected

on June 10, 1947, with americium, another radioactive element, at what records described as the "Chinese Hospital" in San Francisco.

Two days later his leg was amputated. He was taken to the University of California Hospital in San Francisco for studies before and after the amputation. He died 11 months later and is buried in San Francisco. "There was no evidence of disclosure in the chart of this patient," said DOE records obtained under the Freedom of Information Act.

When asked if she knew anything about that case, Durbin said, "His guardian couldn't speak English. He got treated in a good hospital as a consequence."

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On July 18, 1947, the white cast placed on Elmer's left leg after the biopsy was split down the side and removed to prepare for the "tracer injection."

"Some throbbing pain but no other discomfort," a doctor wrote in Elmer's records.

At 3:30 p.m. that day, medical people gathered at Elmer's bedside. He was told of a procedure they were about to perform.

"The experimental nature of the intramuscular injection of the radioactive tracer sample was explained to the patient, who agreed upon the procedure. The patient was in fully oriented and in sane mind," his medical records state.

Three doctors and a registered nurse witnessed the explanation, assisted in the injection and signed their names at the

bottom of Elmer's consent form.

One doctor who signed his name was Bertram V.A. Low-Beer, another early nuclear pioneer who used radioactive substances in medical treatments. Low-Beer's name shows up in Elmer's medical records only on the day he was injected. The consent form also appears to have been written by Low-Beer.

Elmer is the only patient for whom there is documented evidence that he was told of the injection. The consent form, however, does not describe what he was told. Even then, Elmer's consent didn't come close to today's strict guidelines for informed consent, which require written acknowledgment by the patient after full disclosure of the research, its risks and benefits.

Fredna questioned why doctors did not include her when they discussed the experimental procedure with Elmer. "It seems like they should have told me about it," she said.

Elmer's daughter, Elmerine, said her father, with his limited education, would not have understood the explanation. "If they told my father that he was injected with plutonium, that would be like telling him he was injected with ice cream," she said. "He would not know the difference."

CONTINUED

WHAT IS PLUTONIUM?

Plutonium is so lethal that even God didn't dare make it, anti-nuclear proponents say. Yet scientists who work with plutonium every day point out that we all probably have more than a few plutonium molecules in our skeletons as a result of the hundreds of nuclear weapons tests conducted in the '40s, '50s and '60s.

"It's got a bad reputation, but you can't find any cancers that you can attribute to plutonium in human beings," says James N.P. Lawrence, a scientist in health physics at Los Alamos National Laboratory.

I Newell Stannard, a professor emeritus at the University of Rochester in New York and adjunct professor at the University of California, San Diego, said plutonium's bad reputation stems in part from "hysteria" and partly from the fact that someone in the '40s described it as the most toxic element known to man.

"What we should say is that it is one of the most effective carcinogenic elements known. There are many more toxic elements," he said.

John Gofman, a professor emeritus at the University of California, Berkeley, and one of the world's leading experts on the dangers of low-level radiation, rejects the idea advanced by mostly weapons-plant scientists that plutonium can't be linked to cancer in man.

In his book "Radiation & Human Health," Gofman says thousands of pounds of plutonium radionuclides injected into the atmosphere through 1962 have returned to Earth. And he estimates that the plutonium fallout will cause an estimated 950,000 lung-cancer deaths worldwide.

Plutonium's danger to future generations is even greater, Gofman said in an interview. "It's a very potent disrupter of genes and chromosomes. This effect will be far worse than the cancer effect because of the diseases — including cancer, heart disease and schizophrenia — it will produce in future generations."

The following are common questions about plutonium:

Question: What is plutonium?

Answer: It's the 94th element of the Periodic Table. Plutonium, named after the planet Pluto, is a man-made element and one of the densest substances known, with a melting point of 640 degrees centigrade. It is capable of igniting spontaneously when exposed to air.

Question: When was it first made?

Answer: In 1941 at the University of California, Berkeley.

Question: What is the most commonly used form, or isotope, of plutonium today?

Answer: Plutonium 239, which is capable of sustaining a nuclear chain reaction. That is the key to its use in nuclear weapons and for nuclear-power production. Plutonium 238, which is much more radioactive, is used for heat sources and electric generators in space.

Question: Why is it so dangerous?

Answer: Plutonium emits from its nucleus an extremely high-energy alpha particle, which is composed of two protons and two neutrons. Although alpha particles can't penetrate a piece of paper, they pack a tremendous punch to human cells, which can damage or kill them.

Question: What's this energy called?

Answer: The energy is called ionizing radiation, a process in which negatively charged electrons are separated from their neutral atoms. Think of what happens when the cue ball strikes a carefully racked triangle of billiard balls. Once an electron is knocked out of orbit, it careens great distances, breaking the intricate latticework of chemical bonds in the body and producing new chemical reactions, especially in cell nuclei.

Question: How many alpha particles are needed to create a cancer?

Answer: There's no "minimum dose." It's a chance phenomenon. The first alpha particle or the hundred-millionth could be the one that causes the crucial mutation that leads to cancer. Thus any amount of plutonium, however small, can potentially cause cancer.

Question: What are some other health effects?

Answer: Cell culture experiments suggest that exposure to alpha particles can lead to chromosomal instability that could affect future generations.

Question: How long does plutonium remain in the environment?

Answer: Plutonium 239 has a half-life of 24,065 years. That represents the time it takes for half its radioactive atoms to decay into another element. It will take another 24,065 years for half of the remaining plutonium to decay, and another 24,065 years for that half to decay, and so on. Depending on the original pile of plutonium and other factors, it could take as long as 500,000 years to get rid of all but one-millionth of the original pile. If you had a lot of plutonium in the original pile to begin with, one-millionth still could represent a lot of radioactive plutonium.

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The injection of plutonium into Elmer was conducted despite orders to the contrary. On Dec. 24, 1946, the Manhattan Engineer District learned "certain radioactive substances were being prepared for intravenous administration to human subjects" in Berkeley. An immediate halt was ordered.

Then, on April 17, 1947, four months before Elmer's injection, the U.S. Army Corps of Engineers, Manhattan District, sent a memo to the Atomic Energy Commission reiterating the prohibition and going one step further:

"It is desired that no document be released which refers to experiments with humans and might have adverse effect on public opinion or result in legal suits. Documents covering such work should be classified 'secret.' Further work in this field has been prohibited by the general manager."

In that same memo, officials ordered that three documents involving human experimentation be upgraded from "restricted" to "secret" and that a search be conducted to make sure no other agency had gotten any of the records.

A month later, commission officials refused to declassify a paper titled "A Comparison of the Metabolism of Plutonium in Man and the Rat," written by Hamilton and others in Berkeley. "It contains material, which in the opinion of the management of the United States Atomic Energy Commission, might adversely affect the national interest," a May 23, 1947, letter states.

■ ■ ■

Some historians have said experiments with critically ill patients were common in the 1940s. And in fact, radioactive isotopes of strontium and radium, as well as massive doses of radiation to the whole body from X-rays, were given to patients at hospitals throughout the country, records show.

Scientists and doctors working for the

"The fact that they were injected and provided this valuable data should almost be a sort of memorial rather than something to be ashamed of. It doesn't bother me to talk about the plutonium injectees because of the value of the information that they provided."

Patricia Durbin

Lawrence Berkeley Laboratory

Manhattan Project, and later under contract with the AEC, frequently stated the experimental therapies were part of the patients' normal treatment and that they were simply gathering data on physiological changes.

In one case that was similar to the plutonium experiment, eight very ill cancer patients in the early 1940s were exposed over a month to an average of 300 rads of whole-body irradiation from X-rays in a New York hospital. Five died within six months. Scientist L.F. Craver blamed their deaths on their diseases and said such doses should be "well-tolerated" by healthy people.

About 300 rads of whole-body irradiation delivered in a week or less will kill 50 percent of its subjects. Some 420 rads delivered in a one-month period will kill 50 percent of those exposed, according to Finston, a health physicist who recently retired from Stanford University.

Scientist Robert Stone, one of the experiment leaders, admitted the true purpose of the experiments with X-rays in a 1948 letter found at the Bancroft Library at UC-Berkeley:

"I freely admit that in 1942 when we started this work, I was influenced by the fact that we needed to learn as much as we possibly could concerning the effects of total-body irradiation on people with relatively normal blood pictures. At that time, I was confronted with the problem of building up the morale of the workers on the new atomic bomb project, many of whom were seriously worried about the effects of prolonged whole-body irradiation."

The records also show that scientists and doctors knew the ethics of such experiments were questionable and were sensitive about the experiment. In later documents, the AEC itself admitted that a policy of informed consent was well established by 1947.

As late as 1983, the DOE was still sensi-

tive. Alvin Trivelpiece, director of the DOE's Office of Energy Research, put it this way: "The issue of informed consent, if raised, will be difficult to deal with in the light of present DOE and federal policies and procedures regarding human subjects."

■ ■ ■

Elmer was a cooperative patient. Only a week after the amputation, he was eager to get up and around. "Has been up in wheelchair with great joy," Dr. Raymond S. Mullen wrote nine days after the surgery. Mullen was one of the doctors who witnessed the injection.

"In wheelchair most of day. No pain from stump. Eager to find work after convalescence — not depressed," Mullen wrote the next day.

Elmer was discharged from the hospital Aug. 7. He was fitted for a prosthesis and got regular chest X-rays at an outpatient orthopedic clinic. In an entry dated May 11, 1948, a doctor wrote: "This pt. had radioactive stuff injected prior to amp." (The first four words are underlined.)

Elmer's last visit to the clinic appeared to have been July 6, 1949. "Gaining weight and feeling fine. No difficulty with stump. Walking (with) aid of cane," an entry states.

As an amputee, Elmer no longer could work as a railroad porter, so he turned to other ways of making a living. He learned how to repair shoes. He haunted the wharves in San Francisco, where he would get and sell fish.

For the rest of his life he felt phantom aches and pains in the missing limb. "He said they kept the leg. They didn't bury the leg," Fredna recalled. "When his toes would start hurting, he'd say, 'I guess they're working on that foot of mine.'"

A couple of years later, with Elmer wearing a new prosthesis from the California's vocational rehabilitation department, the

couple bundled up their two young children and returned to Italy. "He wanted to make a good living for his family," Fredna said. "After he lost his leg, he just gave up all hope."

The move back to Italy, despite its boast of being the "biggest little town in Texas," demoralized Elmer. In the summer, when a furnace-like heat drives all but the heartiest behind air-conditioned doors, Italy's Main Street looks like a deserted movie set. Elmer had not wanted to leave the hills or the cool breezes that rolled in from San Francisco Bay, but he needed family support. And Italy was home to Fredna's family.

■ ■ ■

In the early 1950s, Italy attracted national attention because of its approach to race relations: Two mayors and two city councils — one for African-Americans and one for Whites. "He was disgusted. He never wanted to come back here. He had so many hopes and dreams for his family," Fredna recalled.

He cleaned bricks in nearby Dallas, repaired shoes at Goodwill Industries, upholstered chairs and sometimes plowed the rich, dark soil farmers called "black gumbo," friends said.

Mostly, it was up to Fredna to hold the family together. For 35 years she taught school, much of the time at Stafford Elementary, which was within walking distance of their small house.

Fredna, a poet in her spare time, thinks she never lived up to her potential, in part because of the pressure of raising two children and taking care of Elmer. "It took something away from me. I haven't done all the things I could have done."

Elmer's now-married daughter, Elmer-We, said her father got the best of care. "Anything he wanted, he got it. He had an automobile to drive; it wasn't always a new one. Whatever he had, my mother provided it."

Elmer made toys for schoolchildren, kites from brown paper bags, lampshades from Popsicle sticks and flower baskets from egg cartons. His son, William, and his granddaughter, April, would go on to become engineers. "He could do anything. But there was nothing for him to do," recalled Speed, Elmer's friend.

A job at Goodwill ended when Elmer began having epileptic seizures and it was no longer safe for him to commute to Dallas. Fredna would put a tablespoon in his mouth when he had a seizure in the mid-

dle of the night. "He would chew the spoon to pieces — his tongue, too," Elmerine recalled.

He had other problems. He drank alcohol "very, very heavily" until 10 or 12 years before he died, Elmerine said. He began taking Thorazine, a drug used in the treatment of various mental disorders. For some reason, it halted the drinking, she said.

David Williams, a physician in nearby Waxahachie, was Elmer's family doctor for the last 20 years of his life. Williams said he diagnosed Allen as a paranoid schizophrenic.

"This paranoia was certainly helped and

"It is desired that no document be released which refers to experiments with humans and might have adverse effect on public opinion or result in legal suits. Documents covering such work should be classified 'secret.'"

U.S. Army Corps
of Engineers memo, 1947

did center around his feeling that he had been utilized as a younger man with this exposure to plutonium," he said.

"What I saw was a fellow who had a loss of limb and became an emotional cripple because of it. He took to the bottle and then got off that. He probably had paranoid schizophrenia all of his life. As far as doing things, I thought he was using this possible exposure as a crutch, a reason, rather than quite doing as well as I would have like to have seen him do."

Elmer told Williams on his first office visit that he had been injected with plutonium. "It was difficult to tell whether to believe him or not. I wondered," Williams said. "I also wondered if it was a portion of his paranoia and whether or not it was a crutch for him not to function as he should have functioned. His conscience needed a salve to where it was OK for his wife to be teaching and earning and so forth."

Williams said he never saw evidence that the plutonium had any physical effect on Elmer. He said he didn't encourage Elmer to talk about the experiment. "I didn't think there was a lot of gain there. Do you follow? In other words, I didn't turn him off; I'd listen, but I felt like he had other, more ongoing problems that were more pressing that we needed to deal with day to day rather than going back to that."

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It was the evening of June 9, 1973. Elmer and Fredna were in Car 1635, Drawing Room D of the "Texas Chief," an overnight train bound for Chicago. Elmer had worked as a railroad porter many years earlier, so the sway of the train and the clacking rhythm of the rails must have cradled him like an old rocking chair.

Then there was the view from his window. Weedy back lots and wash hanging from clothes lines as the train pulled out of Fort Worth. Cows, horses and barns hurtling by. Green pastures unspooling like dreams. And later, the lights. Everything chattering of those old railroad days.

The next day, they were met in Chicago by a limousine driver at Union Station and whisked to a Ramada Inn, where a bouquet of flowers awaited them.

The Allens were on the trip of their life, a 19-day whirlwind that would take them to Chicago and then hundreds of miles northeast to Rochester. Limousines, fresh flowers, private train compartments and immaculate hotel rooms awaited them. And the government scientists were actually going to pay them \$140 for participating in follow-up studies plus \$13 a day.

On the day after their arrival in Chicago, Fredna went sightseeing. Elmer went to a sprawling national lab near Chicago. There he was placed in a whole-body counter, and his urine was collected and studied for traces of plutonium from a long-ago injection.

Against the festive backdrop, Elmer's unwitting participation in the second phase of an experiment launched almost 30 years earlier began. A new generation of researchers carried forward a cover-up initiated by the Manhattan Project scien-

tists.

Neither Elmer nor Fredna nor their family doctor learned of the real purpose of the trip until a year later, formerly classified documents show. Eda Schultz Charlton and John Mouso, two other patients injected with plutonium many years earlier, also were unknowing participants in the follow-up studies, which involved the collection and chemical analyses of urine, stool and blood samples. Relatives of deceased patients whom scientists also wanted to exhume were duped, records show.

"My mother thought this was big stuff coming from Italy, Texas," Elmerine said of her parents' trip. "She thought she was the queen of England. It wasn't like they said, 'We're testing you guys because we injected you with plutonium.'"

■ ■ ■

Chicago, the place Elmer and Fredna were bound for that warm summer night, was the city where it all began. While working as a railroad porter many years earlier, Elmer fell from a train and injured his leg, which eventually led to an amputation.

Doctors said the leg had bone cancer, a disease which is normally fatal in five years. But Elmer was to live another 44 years, which makes the original diagnosis suspect, one scientist said.

"If the diagnosis had been correct, by rights he should have been dead in five years or something like that," said retired scientist John Rundo. "Bone cancer is normally fatal, not universally, but usually. He didn't die, as you know, so one can conclude that he probably didn't have bone cancer." Rundo oversaw the chemical analyses done on the excretion samples taken from Elmer and the others in 1973.

Durbin, the scientist from Lawrence Berkeley Laboratory in California who reviewed Elmer's medical records, also said she doubted the accuracy of "CAL-3's" diagnosis.

"I think the diagnosis of the bone cancer was questionable," she said. "The cells were not convincingly tumorous, at least on my reading of the pathology report."

But in a later interview, she said she believed "CAL-3's" leg still would have required amputation. "They were going to have to take the leg off anyway because the knee was so badly shattered. It hadn't healed well."

In 1967, Durbin learned that at least one patient injected in the 1945-47 experiment had lived at least 20 years, and she began a concerted effort to find out what happened to the rest.

Two decades earlier, she was a young student washing beakers in the laboratory of Hamilton, one of the country's savviest scientists about the biological effects of plutonium.

Durbin, a plain-spoken scientist in her mid-60s, is a staunch defender of the project and says the data saved countless people from being overexposed in the workplace. She said the international community still uses the data to set limits for human exposure to plutonium.

"These things were not done to plague people or make them sick and miserable," she said. "They were not done to kill people. They were done to gain potentially valuable information."

"The fact that they were injected and

THE ACID TASTE OF PLUTONIUM

Los Alamos chemist Don Mastick accidentally gulped a ricocheting blob of plutonium 49 years ago. If you find that hard to swallow, consider this: Mastick is now 73 and says he suffered no ill effects.

"It's easy to assume plutonium's the most poisonous thing in the world, but I'm walking proof you can roll in it, wash yourself off and come out of it," said Mastick, who is retired and lives in Saddle River, N.J.

According to formerly secret memos, the explosion involving Mastick appears to be one of the incidents that led to the experiment in which 18 patients were injected with plutonium.

In August 1944, Mastick was a "bushy-tailed kid" in the chemistry lab at Los Alamos National Laboratory. As the lab's only "ultra-micro chemist," Mastick was studying the properties of plutonium, a super-secret substance known then as "the product."

Los Alamos' entire supply of plutonium was stored in a little glass vial about one-quarter inch in diameter and a few inches long. The vial was sealed by using a flame to close off a small tube protruding from it. The plutonium was so radioactive that the solution was converted to gases, Mastick said.

"When I went to do some work one day, the gases forced it to shoot right out of the little-bitty tube. It bounced off the immediate wall in which it was pointed and into my mouth, which I tasted because it was acid," Mastick said.

Realizing how valuable the plutonium was that he had just swallowed,

Mastick, who was then 22, said he went "trotting" over to Louis Hempelmann's office, a scientist in charge of health issues at the lab.

Hempelmann pumped out his stomach.

"He handed me some waffles and said, 'Go retrieve it (the plutonium),' " Mastick recalled.

Mastick said it was estimated that he received 25 times the lethal dose of plutonium from the explosion. For many years, Los Alamos sent him bottles in which he would put his urine samples and ship them back to the lab.

"For 15 years, my urine was radioactive," Mastick said. "I could blow on a meter, and it would send that off the scale. It was coming out of my lungs, too."

After the accident, Director J. Robert Oppenheimer put Mastick in charge of analyzing the urine specimens from other lab employees. "After six months, I told Oppy I wanted to go overseas and work with the group dropping the bomb."

Mastick got his wish and soon left Los Alamos.

Mastick said he didn't realize how concerned Los Alamos officials were about the medical effects of plutonium. "They never queried me directly," he said.

He said he also knew nothing about the plutonium experiment.

"Good Lord," he said. "I guess I got out of their clutches too fast."

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provided this valuable data should almost be a sort of memorial rather than something to be ashamed of. It doesn't bother me to talk about the plutonium injectees because of the value of the information that they provided."

In late December 1972, Durbin turned the information she had gathered over to the now-defunct Center for Human Radiobiology at Argonne National Laboratory near Chicago. This was the organization that had followed the radium dial painters, the women who died of cancer after licking the radioactive brushes they used to paint watches.

It was decided that survivors' urine, blood and stools would be gathered on the metabolism unit of the University of Rochester's Strong Memorial Hospital. The Center for Human Radiobiology would do the chemical analyses.

Scientists also wanted to study the remains of deceased patients. Over the next five years, they exhumed three bodies and obtained the ashes of a fourth patient.

The MIT Radioactivity Center in Phoenix was in charge of getting permission for the exhumations from relatives. The staff there had done similar work in tracking down radium dial painters and other people exposed to radioactive elements.

The arrangement suited officials at Lawrence Berkeley Laboratory just fine. "The introduction of exhumed bodies into the politically charged Berkeley atmosphere might even result in picketing of the laboratory by students," a worried official is quoted as saying in the AEC report.

Los Alamos National Laboratory, which played a key role in the first phase, took a supporting role in the 1973 follow-up. Some samples from the 1973 studies were sent to Los Alamos, but Los Alamos sci-

entists, particularly Langham, wanted to keep out of it the second time.

Langham, who performed the initial chemical analyses from 11 Rochester patients and an Oak Ridge accident victim, had grown weary of being identified with the experiment, Durbin wrote in a 1971 letter. He was distressed in particular that the Rochester patients had never been told they were the subjects of an experiment and resented the pervasive influence the project had on his entire professional life, Durbin wrote. "He said if such material were available, the Los Alamos group would be interested in participating, but that they did not want to be directly responsible nor in direct contact with whomever was actually obtaining samples," the letter states.

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Elmer and Fredna's trip to Chicago and Rochester began with a March 7, 1973, letter to their family doctor, A.O. Dykes, from Argonne National Laboratory.

"We are trying to locate a patient of yours by the name of Elmer Allen in order to do a follow-up study on treatment he received for a sarcoma in July 1947," wrote Austin Brues, medical director of Argonne's Center for Human Radiobiology.

"We are especially interested in cases of this sort, and his is of particular interest since he has this unusual malignant tumor and has shown such a long survival time," Brues wrote.

"Please assure him it would only be for observation and collection of excreta," he added. Nowhere in the letter is plutonium mentioned, a substance an AEC official later would point out dryly was not given for therapeutic reasons.

Elmerine, grown and with a family of her own at the time, remembers her parents' excitement. "It was like it was going to be an adventure. My mother called. She said, 'You know, I got this letter from this doctor that was one of your dad's doctors when he had his leg amputated in Califor-

"Please note that outside of CHR we will never use the word plutonium in regard to these cases. 'These individuals are of interest to us because they may have received a radioactive material at some time' is the kind of statement to be made, If we need to say anything at all."

Robert Rowland
Director, Center for Human Radiobiology,
Argonne National Laboratory

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nia. When she found out your father was still alive, she was just amazed and what they wanted to do, they wanted to see if we will come to the University of Rochester in New York to run some metabolism tests."

Scientist Rundo recalled seeing the patients. "I looked at them. I saw people who were in reasonably good states of health, considering their ages, considering one had lost a leg 27 years earlier. These were normal people, nice people." The plutonium in Elmer was barely detectable. "His excretion rate was extremely low," Rundo said.

After the tests at Argonne, the Allens rested a day and then boarded a bus to Rochester, where another limousine took them to their hotel. Elmer spent 14 days in the metabolic unit at Strong Memorial Hospital. Fredna kept several souvenirs of the trip, including a Polaroid snapshot of Elmer with a doctor she identified as Christine Waterhouse. A couple of the medical people even gave her their autographs. One was a scientist whose name appears in scientific papers describing the plutonium found in the hair and bones of exhumed corpses.

Fredna said she had no idea what the doctors were doing. "Every time I went to see him, he was in bed. They would study the food he would eat," she said.

For two weeks, Elmer ate the same kind of food. His urine and stool samples were gathered regularly. On the day he was to be discharged, he had a seizure. They stayed an extra day.

■ ■ ■

On April 17, 1974, more than a year after Elmer had been sent home, the AEC's Division of Inspection and the Biomedical and Environmental Research Division began an investigation. The reasons for the inquiry are not clear.

A detailed report of the findings later was prepared and classified "Official Use Only." The DOE now says it doesn't have the report, but The Tribune obtained a copy from a former Capitol Hill staffer. In the report, the DOE deleted the names of patients, doctors, scientists and investigators. The internal inquiry focused mostly on:

- Whether patients in the 1945-47 period had given their informed consent for the experiment.

- Whether the survivors in 1973 were properly informed of the true purpose of the follow-up studies and gave their informed consent.

- Whether the relatives of the deceased patients were properly informed about the exhumations.

The answers were no, no and no.

Investigators fanned out across 14 cities, examining records and talking to scientists involved in both phases of the experiment. More than 250 documents were copied and brought back to AEC headquarters. The investigation uncovered a web of deceit that dated back 50 years. The investigators found:

- No written evidence that any of the patients were informed of the original plutonium injections or gave their consent. Witnesses claimed some patients were told orally they were going to receive a radioactive substance, but plutonium was a classified word at the time. Elmer was told only that he was to receive a radioactive substance.

- In 1973, survivors Elmer, Eda Schultz Charlton and John Mousso were not told the true reason scientists were interested in studying them. They also did not give their informed consent for the studies even though Argonne National Laboratory, as contractor with the AEC, had agreed to abide by regulations requiring such consent for human studies. Robert Loeb, spokesman for the University of Rochester Medical Center, said the hospital didn't require patients to sign informed consent forms because they were involved in excretion studies only.

- The relatives of the dead patients also were deceived or lied to about the true purpose of the exhumations.

One of the documents that illustrated the extent of the cover-up was the last paragraph of a Dec. 21, 1972, memo written by Robert Rowland, a retired scientist who at that time was director for the Center for Human Radiobiology:

"Please note that outside of CHR we will never use the word plutonium in regard to these cases. 'These individuals are of interest to us because they may have received a radioactive material at some time' is the kind of statement to be made, if we need to say anything at all." (The words "never" and "plutonium" are underlined in the memo.)

Rowland, who still lives in the Chicago area, said in an interview that he was given those instructions "orally" by officials in Washington, D.C. "We were not in any way, shape or form to allude to plutonium," he recalled.

A.F. Stehney, another scientist from the Center for Human Radiobiology involved in the follow-up studies, said the plutonium patients weren't told the truth because everybody was "leery of getting these people all excited."

"We were told these people were pretty elderly and might get very upset if we started talking about radioactivity in their bodies."

While scientists were contacting living survivors about follow-up studies, others were trying to secure permission from relatives of deceased plutonium patients for exhumations. Here's what they agreed to tell relatives:

"An appropriate approach would be to say that the center was investigating the composition of radioactive materials that had been injected at an earlier date in an experimental type of treatment; and that since the composition of the mixture was not well known, there would be considerable scientific interest in investigating the nature of the isotope and the effects it may have had."

On Sept. 24, 1973, the body of a 20-year-old woman identified in official records as "HP-4" was exhumed. The patient's sister had given permission for the exhumation. "Since the sister did not inquire as to the reason for the injections, the issue was not broached," the AEC report revealed.

The relatives of seven deceased patients eventually were contacted. None was told the real reason, AEC investigators found. "Disclosure to all but one of the next of kin could be judged misleading in that the radioactive isotopes were represented as having been injected as an experimental treatment for the patient's disease," the report says.

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After the investigation, the AEC ordered that survivors be told the truth. Relatives of the deceased patients also were to be recontacted and told.

In May 1974, Brues, the medical director of the Center for Human Radiobiology, took a night flight to Dallas. There, he met another AEC official and the two of them drove to Milford, Texas, to tell Elmer's physician the truth behind the studies done a year earlier.

"I told him we found that the patient had received plutonium into the muscle of the sarcomatous leg three days before it was amputated, not enough in our belief to cause any trouble or to have any effect on the tumor, but that he should be carefully followed in any case because of the very small number of such cases that are living," Brues said.

Elmer's physician, Dr. Dewey H. Roberts, who was then 80 years old, thought the plutonium might have cured the cancer, Brues said. "Dr. Roberts was quick to form the belief that the injection may have cured the tumor. We tried to cool this but with questionable success. (I had given warning of this possibility before accepting the assignment)," Brues wrote.

The Center for Human Radiobiology was "extremely anxious" to do an autopsy when Elmer died. It also wanted permission to check him again at intervals, Brues told Elmer's doctor.

Roberts assured the Chicago scientist he would be happy to cooperate and wanted advice on whom to call in case of serious illness or death. "He said these old fellows with hypertension, in his experience, are likely to go to sleep some night and not wake up," Brues said.

"We asked Roberts to tell the patient about the nature of the injection as he has a right to know. The records seems to indicate only that he gave voluntary consent to an injection of radioactive material," Brues said.

After the visit with Roberts, the two officials paid a "social visit" to Elmer. "Our visit was welcome; his wife was taking her grade-school class to the zoo in Dallas; he is moving into the new house, finest in the area, apparently somewhat financed by his two children who he visited when in the North," Brues said.

The two scientists didn't tell Elmer of the plutonium injection but advised him to talk with Roberts about a discussion they had had with him. Elmer told the two offi-

cial he would be happy to return for a "recheck" provided he didn't have to fly.

In a follow-up discussion, Elmer's doctor confirmed to AEC officials that Elmer had been told of the injection. "The patient was aware of the injection and wasn't much concerned although he did not know what it was that had been injected," the AEC report quotes Elmer's doctor as saying.

In the spring of 1974, James Liverman, a DOE official, met with Robert Berry, Army general counsel, and Brig. Gen. R.W. Green, the deputy surgeon general of the Army, to tell them they planned to inform the plutonium survivors of the long-ago injections.

"General Green was considerably concerned that no good was to be achieved in his view by surfacing a whole series of issues when nothing could in fact be done at this point in time with regard to changing those issues and that the patients or their relatives might in fact be worse off because of the public, social or psychological trauma," Liverman stated.

AEC officials also became worried in the mid-'70s about how to explain the experiment — should it ever become public.

But word eventually got out. In 1976, the experiment was reported in a Washington, D.C.-based newsletter called Science Trends. The Washington Post also reported the story on the front page on Feb. 22, 1976.

In the Post story, an unnamed official said the department "had no plans to launch an investigation to try to learn more about the injection program." What the unnamed energy official didn't say was that an investigation had just been concluded two years earlier.

The DOE records dwindle after 1974. Unsigned, handwritten slips of paper kept score of how many patients were still alive as the years went by. The decision to discontinue the almost 50-year-old experiment remains, in some ways, as mysterious as the decision to launch the project.

Stehney, one of the scientists involved in the later studies, said things just became too difficult. "There were things we didn't feel comfortable with. We thought we had done as much as could be done at that point."

Rundo, also involved in the follow-up studies, said it was his "vague" recollection that DOE told scientists to stop their investigation. "I think it was the lawyers who were concerned. They were afraid the families might sue," he said.

But Berkeley scientist Durbin tells a different story. "Someone went to talk with one family and made misrepresentations.

"Those of us when we heard about that concluded the waters had been muddied, and we needed to let more time pass, let tempers cool. I was very angry that had happened," she said.

The plutonium experiment topped a litany of human experiments in a report issued in the late 1986 by the U.S. House of Representatives subcommittee on Energy, Conservation and Power. U.S. Rep. Edward J. Markey, a Massachusetts Democrat who chaired the subcommittee, compared the tests conducted by the DOE and its predecessors to the "kind of demented human experiments conducted by the Nazis."

"Documents provided by the Department of Energy reveal the frequent and

systematic use of human subjects as guinea pigs for radiation experiments," the opening sentence of the report says.

Markey urged the DOE to make every effort to find the patients, follow up on radiation-associated diseases and to compensate "these unfortunate victims" for damages. The AEC, after its 1974 internal investigation, also recommended survivors be given medical surveillance, with the AEC or Department of Defense picking up the tab.

■ ■ ■

But there was no pot of gold waiting for Elmer Allen, no government men who came to Italy in his waning years to try to make good.

Fighting his real and imagined ghosts, Elmer lived almost another five years after the subcommittee published its findings. Elmer died on June 30, 1991, of respiratory failure caused by pneumonia. He was 80 years old. On his death certificate, his occupation was listed as Pullman porter.

He spent some of his last days in silence at Italy's nursing home, a quiet place shaded by a large cottonwood tree. There, among the other aged residents, the cheerful nature of the amputee described by surgeons so many years ago was still evident.

"I knew he didn't want to be here, but he wasn't mean to us because he didn't want to be here. He tried to do quite a bit of stuff for himself," said Alithea Brown, a licensed vocational nurse at the Italy Convalescent Center.

"He wasn't a conversation starter. He would talk to you if you talked to him. I just never asked him how he lost his leg." □

IN MEMORY OF ELMER

Inside Elmer's funeral pamphlet

STEAL AWAY TO SOME SECRET PLACE

When my heart is heavy and my burdens
hard to bear,
And there's no earthly being with
whom my load to share,
I steal away to some secret place
and have a talk with God,
For He is the One who knows the path
these weary feet have trod.

While in this secret chamber on bended
knees I pray,
"Lord, keep me in the path of righteousness
on this and every day,
Deliver me from all evil and let
Thy will be done.
Grant me a home in Thy kingdom when
this race of life is run."

As I quietly and tearfully kneel there,
He gently lifts my head,
And gives me strength and courage
to keep on down the road,
Toward that Celestial City with its
beautiful pearly gates,
Where my Savior and my loved ones
for me await.

So when your burdens are heavy and
storm clouds darken your way,
When friends have turned their backs
and all manner of evil they say,
Just when your think all hope is gone
and your load you cannot bear,
Steal away to some secret place and
...pray, God is always there.

—Fredna Hadley Allen

THE COVER-UP CONTINUES

A cover-up that began at the dawn of the Atomic Age shows no sign of ending in the ashes of the Cold War.

Though nearly half a century has elapsed, the Department of Energy, the federal agency that inherited many functions of the wartime Manhattan Project, still refuses to reveal the identities of most of the patients injected with plutonium.

On Nov. 20, 1989, The Tribune made its first request to the DOE under the Freedom of Information Act for all documents related to the experiment.

For four years, the sprawling agency has stalled. It has released some documents but mostly has withheld critical records such as medical files and other paperwork identifying the patients.

Through the years, DOE has given a variety of reasons for refusing to release records, ranging from privacy concerns to saying it doesn't possess the documents.

The stonewalling has continued despite Secretary of Energy Hazel O'Leary's promise last spring that the department would begin systematically declassifying health and safety information for public scrutiny.

"People simply don't trust us in the Department of Energy," she said. The DOE's attitude should be, "We don't have any data that you can't have," she said.

While the rhetoric has improved under the Clinton administration, Don Hancock of the Southwest Research and Information Center said he has seen no evidence that the DOE is taking the Freedom of Information Act seriously.

"The DOE is a notorious violator of the FOIA," said Hancock. "It's a very long-term problem. They don't comply with the spirit or the letter of the law."

Officials at DOE headquarters in Washington, D.C., say they know nothing about the experiment. "You're asking me to take your word that this happened," spokesman Sam Grizzle said recently.

"I have no knowledge of this whatsoever. It probably happened years before I was born, so I don't have any historical files here to refer to whatsoever," he said.

Arjun Makhijani, president of the Institute for Energy and Environmental Research in Washington, D.C., said the plutonium experiment is important because it contains "a lot of lessons" for Americans. "It's very important that people derive the lessons and put appropriate safeguards in place to

see these abuses don't happen again."

In response to The Tribune's original 1989 request, the DOE Albuquerque Operations Office said it couldn't find any records on the experiment, with the exception of one boilerplate contract. The Tribune received two documents from DOE offices in Chicago and Germantown, Md. Other than these minor documents, The Tribune received nothing, so the newspaper appealed.

Shortly after, The Tribune began to get phone calls from John H. Carter, the DOE official in charge of all the DOE's FOIA requests.

There were a couple of off-the-record discussions with Carter. Subsequently, The Tribune dropped its appeal and received a printout describing publicly available articles related to human beings and plutonium.

More than two years elapsed.

In July 1992, the search resumed for the identities of the patients. This time The Tribune's attorneys, the Baker & Hostetler law firm in Cleveland, filed a new Freedom of Information Act request.

The seven-page request was based in part on the skimpy documents received from the DOE. But the key to pinpointing specific documents was a 1974 inspector general report and related memos prepared by the Atomic Energy Commission, the DOE's predecessor.

The DOE, however, says today it doesn't have a copy of its own 1974 inquiry. But The Tribune got its copy from John Abbotts, formerly a special assistant to a U.S. House of Representatives subcommittee that in late 1986 issued a scathing review of how Americans had been used by the DOE as "nuclear guinea pigs."

The Energy Department has contended the patients' names and medical records can be withheld because of privacy laws. But under the Freedom of Information Act guidelines, privacy considerations don't apply when a person is dead.

The following is what has happened since Aug. 28, 1992, when The Tribune's second FOIA request was filed:

- March 1, 1993. John Layton, inspector general of the DOE, denies The Tribune's Freedom of Information Act request. He says his office has "no materials responsive to the request." According to records obtained from Abbotts, Lay-

tion is the same DOE official who in 1986 released the AEC report and other pertinent documents in an unrelated FOIA request.

- April 5, 1993. The Tribune appeals the DOE's inspector general decision.

- April 30, 1993. The DOE's Office of Hearings and Appeals upholds the DOE's inspector general. "We find the search conducted by the IG in this case was adequate."

- May 13, 1993. U.S. Rep. Steve Schiff writes DOE on behalf of The Tribune, asking it to speed up their review of records.

- May 26, 1993. The DOE sends two packages of records collected from its Albuquerque, Oak Ridge, Tenn., and San Francisco offices. Many are triplicate and quadruplicate copies of reports and memos The Tribune had received three years ago, as well as scientific reports available through many university libraries. Nothing is provided from DOE's Chicago office — where the follow-up studies on the survivors and exhumed remains of the patients were conducted in the '70s. No patient names are included either.

- July 6, 1993. The Tribune appeals the May 26 response and demands information about how the search was conducted. "It is evident that a number of patient studies were conducted by agency officials during the 1970s and later, yet none of those studies was produced in response to the specific FOIA request," said Loretta Garrison, attorney for The Tribune.

- Aug. 3, 1993. The Tribune demands the DOE retrieve all the records related to the plutonium experiment maintained by Patricia Durbin, a scientist at Lawrence Berkeley Laboratory. Durbin had told The Tribune in an interview, "Nothing at Berkeley is ever thrown away."

- Oct. 1, 1993. The DOE's Chicago Operations Office sends The Tribune items purportedly responsive to six items. There's only one hitch: The documents are copies of DOE documents that The Tribune had included in its 1992 Freedom of Information Act request. DOE officials say they don't know how the mix-up occurred.

- Oct. 8, 1993. The DOE's Chicago office finally sends five documents. For the first time, the documents include the name of a patient: Elmer Allen. But The Tribune had uncovered Elmer Allen's identity more than a year earlier.

THE MINDS BEHIND THE EXPERIMENT

Everyone seemed to agree that intensive study was needed. But it's tough to tell exactly who authorized human plutonium experiments.

In the summer of 1944, as scientists on a windswept plateau in Los Alamos rushed to complete a bomb more powerful than 10,000 tons of TNT, an accident occurred in one of the labs.

Ten milligrams of highly radioactive plutonium — about 1/10,000th of a teaspoon — exploded in the face of a chemist named Don Mastick. Mastick, who swallowed a small amount, is still alive.

But in the weeks after the explosion, Mastick's fellow scientists were horrified that medical officials had no way of determining how much plutonium was in Mastick's body or how serious the dose was.

The accident led to a flurry of memos between Director J. Robert Oppenheimer and Louis Hempelmann, Los Alamos' first health group leader. Meetings were held with top medical officials of the Manhattan Project.

Out of that came a biological research program that called for the injection of plutonium into a human being, according to formerly secret memos from Los Alamos National Laboratory.

Los Alamos played a major part in the plutonium experiment, analyzing excretion samples from 11 patients injected at Strong Memorial Hospital in Rochester, N.Y., and one patient at a military hospital in Oak Ridge, Tenn.

But the experiment appears to have been a cooperative effort among the scientists working at nuclear labs around the country.

Not only were Los Alamos scientists clamoring to trace the course of plutonium in the human body, but so were atomic researchers in Chicago, Berkeley, Calif., and Tennessee.

In the rush to build the atomic bomb, not only rank-and-file workers, but the scientists themselves — the so-called "long hairs" — inadvertently were being exposed to plutonium. And as one researcher put it, the loss of scientists would be akin to losing generals in an army.

It was an experiment everybody wanted. But afterward, nobody wanted to claim credit for it. "Everybody was nervous as cats about the fact that these people had been injected without their knowledge," said Berkeley scientist Patricia Durbin.

The late Stafford Warren, chief of the Manhattan Project's medical section under Army Gen. Leslie Groves, is credited as the person "primarily responsible" for the initiation of the program, according to a 1950 Los Alamos report. But other DOE documents say Warren, a native of Maxwell City, N.M., who went on to become the first

dean of UCLA's medical school, wasn't really the sponsor.

Hymer Friedell, a physician who is retired and living in Cleveland, worked as Warren's assistant during the war. Friedell said Warren approved the experiment but did not necessarily initiate it. "Often experiments were initiated by various investigators. If it looked reasonable and would make a contribution to the war effort, it was approved," Friedell said.

No one source explains exactly how the experiment unfolded. The following are excerpts from documents that make reference to human experimentation with plutonium:

• Jan. 5, 1944. Glenn Seaborg, Nobel laureate and co-discoverer of plutonium, writes a memo to Robert Stone, a health official at Chicago's Met Lab, warning that "even very small amounts" of plutonium in the body could prove dangerous.

"I would like to suggest that a program to trace the course of plutonium in the body be initiated as soon as possible. In my opinion, such a program should have the very highest priority."

But in a telephone interview from his Bay area home, Seaborg said he knew nothing about the human experi-

ments with plutonium. "Oh, God, no," he said. The memo referred to experiments with animals, Seaborg said.

• Feb. 8, 1944. Joseph Hamilton, a Berkeley scientist, receives 11 milligrams of plutonium for rat studies.

• Aug. 16, 1944. Hempelmann writes Oppenheimer, discussing the plutonium explosion and saying studies are urgently needed to develop ways of detecting plutonium in urine and stools and extrapolating how much is in the body.

• Aug. 16, 1944. Oppenheimer responds to Hempelmann, authorizing programs to develop methods of detecting plutonium in excreta and lungs.

"As for the biological sides of the work, which may involve animal, or even human experimentation, I feel that it is desirable if these can in any way be handled elsewhere not to undertake them here," Oppenheimer writes.

• Aug. 29, 1944. Hempelmann writes another memo to Oppenheimer summarizing a "biological research program" agreed to four days earlier with the Manhattan Project's Warren and Joseph Kennedy, head of Los Alamos' Chemistry-Metallurgy Division.

The third aspect of the three-pronged program calls for "tracer experiments on humans to determine the percentage of plutonium excreted daily."

Once the analytical methods are worked out, further metabolic studies will be turned over the Atomic Energy Project in Rochester, the memo says.

• Dec. 2, 1944. Warren summarizes a medical experiment program investigating and comparing the effects of radium and plutonium in human beings and rats. Ratios between blood levels and urine and fecal excretions are to be established in rats after a "single intravenous injection."

Then, tracer experiments are to be done with humans "so that the comparison factor can be made between the rat data and human data," he writes.

• March 26, 1945. Hempelmann writes a memo to Oppenheimer about an earlier meeting in Los Alamos with members of Los Alamos' chemistry and medical groups.

Among other requests, the Los Alamos group asks the Manhattan Engineer District to help make arrangements for a human-tracer experiment to find out how much plutonium is excreted daily in the urine and stools.

"It is suggested that a hospital patient at either Rochester or Chicago be chosen for injection from one to 10 micrograms of material and that the excreta be sent to this laboratory for analysis," the memo says.

• March 29, 1945. Oppenheimer writes a letter to Warren to add his "personal indorsement (sic)" of the Los Alamos requests.

"We all have the feeling that at the present time the hazards of workers at Site Y (Los Alamos) are probably very much more serious than those at any other branch of the project, and that it would be appropriate that the medical program of the Manhattan District consider some of our problems rather more intensively than they have in the past," Oppenheimer writes.

• April 10, 1945. The first human being, an Oak Ridge man with severe auto injuries, is injected with plutonium. □

"We thought the experiment was outrageous. I don't think they really discovered terribly much. ... It's difficult to arrive at a firm conclusion about the metabolism of plutonium from such a small sample size."

Katherine Yih
International Physicians for the Prevention of Nuclear War

"Everybody relies on this data. This is the single most-often-used set of numbers. Everything goes back to this one set of data. It's all there is."

Patricia Durbin
Lawrence Berkeley Laboratory

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WAS IT WORTH THE RISK?

What did scientists learn after they injected 18 people with plutonium? Depending on who's talking, the information is priceless or worthless.

The idea behind the experiment was this: Inject a known amount of plutonium into terminally ill patients, plot the rate at which it leaves the body, then apply the excretion rates to workers accidentally exposed.

Manhattan Project scientists also were able to determine how long plutonium circulated in the bloodstream and where it was deposited in the human being from tissues samples taken from patients who died soon after the injections.

So theoretically, if healthy workers at Los Alamos National Laboratory inadvertently were exposed to plutonium, the scientists would gather samples of their contaminated urine and stools. Using the excretion tables from the earlier plutonium patients, they would try to extrapolate how much of the radioactive substance was in the workers' bodies.

"Everybody relies on this data," says Patricia Durbin, a scientist at Lawrence Berkeley Laboratory. "This is the single most-often-used set of numbers. Everything goes back to this one set of data. It's all there is."

But other scientists, including the International Physicians for the Prevention of Nuclear War, condemn the experiment. In a recent book, the group says the work was not only unethical but also of dubious scientific merit.

"We thought the experiment was outrageous," said Katherine Yih, a scientist and research coordinator for the book, which is titled "Plutonium: Deadly Gold of the Nuclear Age."

"I don't think they really discovered terribly much. There were a lot of variations among the individuals, and it's difficult to arrive at a firm conclusion about the metabolism of plutonium from such a small sample size."

Other critics say the excretion of plutonium varies too much from individual to individual to make the data reliable. Some of the patients were suffering from impaired liver and kidney functions, which would have further skewed excretion curves.

The information on the experiment became public at a time when the so-called "safe" standards for plutonium exposure were under attack and a large commercial demonstration reactor was about to be built using large amounts of fuel, recalled one Senate staffer on Capitol Hill. Pro-nuclear officials used the fact that none of the patients had come down with cancer to support their argument that standards didn't need to be lowered, he said.

But some patients could have died of diseases caused by immune-system damage before cancer occurred, some scientists say. The value of the experiment is even more dubious because most workers would likely be exposed to plutonium when it was accidentally imbedded in their skin or through inhalation. When inhaled, plutonium is far more dangerous than when it is injected.

Nonetheless, the data still have value, others say.

"All of the dose calculations that we've done are based upon the kinds of measurements done in this experiment," said Roland Finston, a health physicist who recently retired from Stanford University. Finston helped The Tribune calculate the radiation doses to each of the 18 patients.

"If you tell me there's a certain amount of activity in the bloodstream or lung, the only way the doses to the various tissues are going to be known is by this kind of experiment — unless you want to rely on animal data."

Given that plutonium was going to be manufactured in large quantities in the future, the scientists might have been criticized for not trying to learn more about how plutonium was metabolized in the body, Finston said.

When scientists injected Albert Stevens with plutonium, they believed he had stomach cancer and little time left to live. They were wrong. And even after Albert died 21 years later, their "ghoulish" experiments continued.

M

aybe it was the cool promise of the mountain that rose up so suddenly from the desert's pale stubble that drew the family, camera in hand, from the cramped Model-T.

They had been on the road for nearly a year, slowly making their way across the rutted highways to California. They had pitched their 9-by-12-foot tent in the snows of Colorado and under the shade of New Mexico's cottonwood trees. Still, the intoxicating vistas of the West were irresistible.

Perhaps the boy aimed the box camera at his father. A boy 10 or 11 years old at the time who for the rest of his life would remember the bleached pottery shards he found in the red wash of a deserted Indian village. In the camera, he held for a moment the tiny image of his father, a man who wore a white shirt and tie in the middle of the desert.

The shutter clicked. Seventy years later, his father, Albert Stevens, still is smiling as if he owned the whole mountain behind him. The smile is so wide and free that it sails out of the picture like a Frisbee.

Feet planted firmly in the middle of that meadow, Albert undoubtedly believed he was on the way to a new life, a new start for himself and his young family.

His fate was beyond anything he could have imagined.

Long after Albert relocated his family to a small town in Northern California and residents had grown accustomed to the gleaming white shirts he wore on house-painting jobs, his optimism withered. In its place, a huge ulcer gnawed at his belly.

Hampered thin from the pain, Albert, then 58, sought help in 1945 from doctors at the University of California Hospital, San Francisco. There, in Ward B of the prestigious medical institution, Albert was singled out by scientists working on the supersecret atomic bomb project.

Before stomach surgery, Albert was injected with a massive dose of plutonium. He was assigned the number "CAL-1" and became one of the most important laboratory subjects of the Manhattan Project.

For almost a year after the plutonium was administered, scientists traveled to Albert's home and collected the plutonium-laced urine and stool samples he kept for them in a shed behind his house. The data went into a secret report that remained classified for years titled "A Comparison of the Metabolism of Plutonium in Man and the Rat."

Albert was injected with what one scientist years later would describe as "many times the so-called lethal textbook dose" of plutonium. Yet, he was to live almost another 21 years. He died in 1966 at the age of 79.

In 1975, eight years after his body was cremated, his ashes were shipped to Argonne National Laboratory near Chicago for further study. The whereabouts of most of those ashes still are unknown.

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The trip across country began in 1920 when Albert learned that his asthmatic wife, Estella, probably would not survive

another year in Dayton, Ohio. He sold seven rooms' worth of furniture, loaded the family and the rest of his belongings into the skimpy-wheeled Ford and took off for California.

Once past Chicago, the highways were gravel or dirt, and it was the rare traveler who made 125 miles in a day. When money was short, Albert stopped and worked, sending his two children, Thomas and Evelyn, to the local schools.

For Thomas, the cross-country trip was one of the great experiences of his boyhood, an adventure Huckleberry Finn might have envied. Looking back, though, Thomas said he realizes what courage his father had to strike out for California with no job and a young family to feed. "He had an awful lot of nerve. Anyone starting across the country like that had to depend on themselves," he said.

The family settled near Long Beach, Calif., but Albert fell in love with the breathtaking beauty of Northern California on a hunting trip. He soon moved the family to Healdsburg, a small town on the banks of the Russian River, 75 miles north of San Francisco.

Albert, a toolmaker in Ohio, traded in his equipment for a paintbrush and soon developed a thriving house-painting business in Healdsburg.

In the spring of 1945, when wild yellow mustard covers the hills, he drove down to see doctors at the University of California Hospital in San Francisco. He had been suffering from stabbing pains in his stomach for a year and a half and had lost 15 pounds, his medical records show.

"Started as a typical ulcer pain, now constant. Progressive weakness and weight loss," a doctor wrote on an X-ray consultation request dated May 6, 1945.

Albert was diagnosed as having stomach cancer. The radiologist who did the X-rays noted that Albert appeared to have a neoplasm — an abnormal growth that is not necessarily malignant — in his stomach. He suggested the patient be "gastroscopied for confirmation," but there are no records indicating this was done.

On May 18, 1945, Albert was anesthetized and placed on his right side with a pillow under his chest. Then, a long incision paralleling the ninth rib was made,

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and a difficult, complex operation began.

The surgeons found a "huge, ulcerating carcinomatous mass" in the upper part of his stomach. The mass had grown into the liver and the tail of the pancreas. Initially, doctors planned on removing the entire stomach, but in the middle of the operation, they decided to remove only two-thirds of it.

Half of the left lobe of the liver, the entire spleen, most of the ninth rib, lymph nodes, part of the pancreas and a portion of the omentum — an apron of fat covering the internal organs — were removed.

"The patient withstood the procedure exceedingly well. He was returned to the ward in good condition," a surgeon named Dr. S. Johnson reported.

A hospital pathologist later examined part of the removed stomach, membrane and lymph nodes, but the medical records don't say what happened to the liver, spleen, pancreas or ninth rib.

Albert's medical records, which consist of only seven pages, also don't mention anything about a procedure he underwent four days before the stomach surgery.

On May 14, 1945, Albert was injected with 3.5 microcuries of plutonium 238 and 0.046 microcuries of plutonium 239, a dose equal to 446 times the radiation the average person receives in a lifetime.

Though it has a shorter half-life, plutonium 238 is much "hotter" and more dangerous to human tissue than plutonium 239. Scientists probably injected this isotope into Albert because it was easier to detect with the crude instruments of the time.

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At the time of the operation, Albert's children were told he probably did not have more than six months to live. Thomas Stevens and his wife flew down from their home in Michigan. The couple gave blood at the hospital in case Albert needed a transfusion.

"We were told they removed half of his stomach, half or part of his esophagus and part of his small intestine. For the rest of his life, he had to eat very small meals. It changed his life entirely," Thomas recalled.

The doctors didn't tell Thomas or his sister, Evelyn, about the injection. Nor did they ever reveal to the children, who have lived for decades with the belief their family had a history of cancer, that Albert had been misdiagnosed.

He didn't have stomach cancer, after all.

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The behind-the-scenes story of what happened to Albert when he was hospitalized is contained in an extraordinary oral history of a Berkeley scientist named Kenneth G. Scott on file at UC-Berkeley's Bancroft Library. But first, some background:

Scott, who once boasted that LSD could halt cancer growth, worked with scientist Joseph Hamilton at UC-Berkeley's Crocker Radiation Laboratory during the war years. And Hamilton was the scientist the Atomic Energy Commission said appeared to be responsible for injecting Albert with plutonium.

Sally Hughes, a medical historian at UC-Berkeley, conducted the two-day interview with Scott at his home in Novato, Calif., in December 1979. At the time, Scott was diabetic and had been partially disabled by a stroke. He also was drinking, Hughes recalled.

"I certainly found it an unusual situation to be in," Hughes said. "Even then, I couldn't conclude how drunk he was. It seems to me he had it in a tall plastic glass. At first I thought it was a soft drink."

Lying in a hospital bed with his wife hovering nearby, Scott told Hughes he left the Crocker lab in part because Hamilton wanted to do some "incautious experiments."

"I thought they were morally wrong," Scott said.

"Are you talking now about the human experiments?" Hughes asked.

"Yes."

"And he (Hamilton) went ahead and did those?"

"Yes, he did, and he did the first one with my help."

"That was the plutonium?" Hughes asked.

"Plutonium 248 (sic), which we gave to this nice man who was scheduled for stomach surgery. They were sure — Earl Miller for example, was sure — that he had cancer of the stomach and his probable survival wasn't very great. He was 55, maybe, when I first found him. (Miller was a radiologist at the University of Cal-

ifornia Hospital, San Francisco.)

"We injected him with plutonium 238, and the story of it is that he didn't have a cancer that anyone could demonstrate. Earl Miller got very upset with that and looked for days at slides of this man's post-op remains, and he just didn't have it."

Scott said it was easy during the mid-'40s to do experiments on human beings. It was a matter of finding a "needy patient" who had a known disease, he said.

"He (CAL-1) came out of the clinic for us at UC," Scott said. "I took the plutonium over there and gave it to Earl Miller, who injected it into this guy."

Miller, who retired in 1974 and still lives in California, said he remembered the patient mistakenly diagnosed with stomach cancer, but he denied injecting the man with plutonium. "There was never any time in my whole life where I injected anyone with plutonium."

"Hamilton may have injected him. I would have remembered if I ever injected it," he said. "It looked as though he had terminal cancer. I do remember the autopsy showed it to be a benign thing."

Miller's name does not appear in Albert's medical records. Pathologist Dr. James F. Rinehart, who examined the stomach specimen taken from Albert during the operation, diagnosed the mass as a "benign gastric ulcer with chronic inflammation."

■ ■ ■

In his oral history, Scott said he developed an interest in "CAL-1" after the operation. "I got very interested in him as a person, and I contracted through the laboratory to buy all of his urine and feces, for which he would get a monthly check. We would go up once a week and pick it up in ... various bottles we left up there with him."

"Did he know what was going on?" asked Hughes.

"Never told him," Scott responded.

"What was the outcome?"

"Finally, the laboratory wouldn't pay for his feces anymore. He was in excellent

and I figured they were using him for a guinea pig," she said.

"We knew they were using things they weren't sure of. But he was dying, and we were praying that something would help. And it did help," she said.

Records once stamped "secret" show that the Berkeley scientists were indeed taking excellent care of Albert. He was one of their most important "experimental subjects," and they did not want to lose him.

■ ■ ■

health. His sister was a nurse, and she was very suspicious of me. But to my knowledge he never found out, and he slipped through our fingers at the age of 88. He died from something."

"Nothing to do with the plutonium?" asked Hughes.

"He got many times the so-called lethal textbook dose of plutonium," he said.

■ ■ ■

Stevens' son, Thomas, said he remembered people driving up to Healdsburg to pick up his father's urine and stools, which were kept in a shed behind the house. His father believed the collections were just part of his follow-up care, he said.

"They sent an intern and a nurse down once a week from the hospital. He was led to believe it was all done because of the operation he had had. They kept saying he was doing very well, that it was an unusual operation," Thomas said.

Thomas and his sister, Evelyn, both said their father never mentioned being involved with a secret experiment. "What we thought was, they were taking excellent care of him. That's what they implied," Evelyn said.

Evelyn, who was about 30 years old at the time of the surgery, said her father's medical care was free. "My mother

In July 1945, two months after Albert's surgery and just four months before Albert's wife died, a worried Hamilton wrote a secret letter to colleague Robert Stone. Stone was a radiologist who during the war years was in charge of the health division at the Met Lab in Chicago, and he was one of the scientists responsible for the plutonium experiment.

Hamilton feared Albert was going to move out of the Berkeley area because of money problems, and Hamilton wanted to figure out a way to keep him close to the lab:

"I am writing concerning our experimental subject, Mr. Stephens (sic), who was given the 50 micrograms equivalent of Pu 238 approximately two months ago. This man has formerly been a painter by trade, but due to his illness, his economic condition is somewhat difficult, although I believe he owns his own home in Healdsburg, California. Kenneth (Scott) and I are very much afraid that the man may sell his house and go to live at some distant point which would, of course, put an end to our most interesting series of experiments.

"This proposal may be totally irregular and out of keeping with Army policy, but since we have, to date, maintained daily collections of all excretions, it would seem most unfortunate not to have the assurance of his continued presence within a reason-

able distance from Berkeley. I think this end could be accomplished if we could pay the man 50 dollars per month," Hamilton wrote.

Five days later, Joe W. Howland, a first lieutenant in the Manhattan District's Medical Corps, wrote back, suggesting alternatives.

The Berkeley office might consider paying for "CAL-1's" care in a hospital or nursing home. Or perhaps placing him on the payroll in some "minor capacity without release of any classified information," he said. "It is not recommended that he be paid as an experimental subject only," Howland cautioned. The two letters are on file at UC-Berkeley's Bancroft Library.

It's unknown whether Albert was paid, but he remained in the Bay area. Evelyn said her father never mentioned receiving money from the government.

■ ■ ■

In 1946, almost a year after Albert's injection, Berkeley researchers published a classified report titled "A Comparison of the Metabolism of Plutonium in Man and the Rat."

"The fate of plutonium injected intravenously into a human subject and into rats was followed in parallel studies," the opening sentence states.

Five rats and one human being who had a "gastric neoplasm" were injected on the same day. Two of the rats were killed the day after the injection, and the distribution of plutonium in their bodies was measured. The three other rats "were allowed to live for the duration of the experiment" and their secretions were compared with the human subject.

Four days after the plutonium was administered to the human being, "specimens of rib, blood, spleen, tumor, omentum and subcutaneous tissue were

HOW WE FOUND ALBERT

The first break in cracking the identity of the California patient known as "CAL-1" came in December.

Barton Bernstein, a history professor at Stanford University, sent us a letter he had found years earlier at the Bancroft Library at the University of California in Berkeley. The July 7, 1945, letter, originally marked secret, discussed a house painter named "Mr. Stephens" who had been injected a few months earlier with 50 micrograms of plutonium 238 and owned a home in the small town of Healdsburg, Calif.

We contacted a local museum in Healdsburg to find out what historical records they had. An official there put us in touch with a crack-jack genealogist named Lorlei Metke. We gave Metke the slim facts we had: We wanted to find a house painter named "Stephens" who owned a house in 1945. We also gave her the age and death date of "CAL-1," information we'd gotten from the Department of Energy under the Freedom of Information Act and other sources.

It was a long shot.

But Metke plowed through city directories, phone books, voter, birth, marriage and death records and newspaper obituaries and finally consulted some of her old friends. The research convinced Metke the name "Stephens" was misspelled. Records showed that a house painter named Albert Stevens owned a house in Healdsburg in 1945. Metke also tracked down Albert's two children, Thomas Stevens and Evelyn Schilling.

We contacted both of them. The details they recalled about their father — the time of his hospitalization, the diagnosis, the collection of his excretion samples — exactly matched information we had.

Thomas Stevens, 82, was shocked to learn of his father's role in the experiment. "It's inconceivable that anything like this could have occurred. You think of something like this happening in other countries," he said.

Albert's daughter, Evelyn Schilling, was equally stunned. "They really should be thrown in jail," she said of the scientists who conducted the experiment. "Anybody who does this sort of thing should be hung up by their heels until they can't live any longer."

Thomas authorized us to obtain Albert's medical records from the University of California Hospital, San Francisco. Unlike Elmer Allen's records, those documents contained no reference to the injection. But the proof came when we got Albert's death certificate and checked the Santa Rosa, Calif., funeral home where he had been cremated. His ashes had been shipped in 1975 to Argonne National Laboratory near Chicago.

Why would a national laboratory, which billed itself at that time as one of America's "major atomic energy research and development establishments," want the cremated remains of a California house painter?

Because even after cremation, most of the plutonium injected so many years earlier was still in the ashes.

EXCERPTS FROM THE LETTER ON ALBERT

Dear Doctor Stone,

I am writing concerning our experimental subject, Mr. Stephens, who was given the 50 micrograms equivalent of Pu 238 approximately two months ago. This man has formerly been a painter by trade but due to his illness, his economic condition is somewhat difficult, although I believe he owns his own home in Healdsburg, California. Kenneth (Scott) and I are very much afraid that the man may sell his house and go to live at some distant point which would, of course, put an end to our most interesting series of experiments.

Joseph G. Hamilton, M.D.

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obtained from the patient," the report says.

The human subject is not identified by name or number in the original report, which now is declassified. But in a 1972 paper, Patricia Durbin, a Berkeley scientist who became interested in the experiment in the late '60s, attributed most of her information on "CAL-1" to the "Man and Rat" paper.

And "CAL-1" was Albert.

"Measurable amounts" of radioactivity were found in the tumor, spleen and blood of the human. The red blood cells contained almost 10 times as much plutonium as the plasma fraction of blood, the report says.

The human rib was scraped with a sharp instrument and split longitudinally, and the marrow was removed. The different parts of the bone were ashed and analyzed for plutonium. Most of the plutonium gravitated to the bone marrow and trabecular bone, the lacy spongelike bone threaded with marrow.

"It can be calculated that 87.2 percent of the plutonium administered was deposited in the skeleton, providing the rib sample is representative of the skeleton generally," say the four authors, who included Hamilton and Scott.

The report concludes that human beings excrete plutonium much more slowly than rats, thus making "the problem of chronic plutonium poisoning a matter of serious concern for those who come in contact with this material."

In 1947, declassification officers in Oak Ridge, Tenn., refused requests to declassify the "Man and Rat" paper "because it contains material, which in the opinion of the management of the United States Atomic Energy Commission, might adversely affect the national interest," according to a letter on file at UC-Berkeley's Bancroft Library.

Albert eventually recovered from his stomach surgery. Incredibly, he was to live nearly 21 years after he was diagnosed as terminal and injected with the "lethal" dose of plutonium.

"Believe it or not, he did do some painting, but not for very long. He worked on the Healdsburg Hospital for a while. He did some rather painting. It got to the point where he wasn't strong enough anymore," Evelyn recalled.

Evelyn said she was surprised that her father lived as long as he did. "We came from a sturdy family. He had always been very, very healthy before all this surgery came along. He was not heavy on church or anything like that. It was willpower, I guess," she said.

Durbin said surgeons were amazed by "CAL-1's" stoicism. "After the plutonium injection, he went to surgery. They found out that this man was one of the greatest livers with intense pain that the surgeons had ever encountered. He lived with the pain until he just couldn't stand it any longer," she said.

In another scientific paper on the plutonium patients published in 1976, Durbin and another scientist calculated that "CAL-1" — Albert — received 7,420 rads to the endosteal tissue, the blood-rich tissue lining the cavities of his bones. In the paper, Durbin estimates the lowest dose at which plutonium might cause bone tumors to be 600 rads. According to those calculations, Albert received more than 12 times the dose that would produce a tumor.

Ten years after he was injected, Albert underwent a checkup at the University of California Hospital, San Francisco, his medical records show. The radiologist noted "rather marked" degeneration in the lumbar region of Albert's spine and several degenerating discs. The changes could have been caused by the radiation from the plutonium.

On Jan. 9, 1966, Albert died of heart disease in Santa Rosa, Calif., 12 miles from the town of Healdsburg, where he had brought his ailing wife and two young children so many decades before. He was 79 years old.

Roland Finston, a health physicist who recently retired from Stanford University and helped The Tribune calculate the radiation doses of the 18 plutonium patients, said Albert's heart disease was probably unrelated to the plutonium in his body. Finston said he was not surprised that Albert lived for such a long time. "When the radiation dose is spread out over time, the impact — the acute physical damage or disruption — is mitigated," he said.

"The body has chemical repair systems that will imperfectly, sometimes perfectly, identify lesions in hereditary material and fix them," Finston said. "If the radiation is delivered at a high rate, it overwhelms the body's ability to repair the damage."

Plutonium, which gravitates to the liver and skeleton in human beings, could have destroyed cells in those organs of Albert's

body, he said. "Had he lived longer, it would not have been surprising had he developed a liver or bone tumor," Finston said.

Two days after his death, Albert was cremated at the Chapel of the Chimes in Santa Rosa. His ashes were placed in a bronze urn in the chapel's mausoleum.

■ ■ ■

The story might have ended there. But the plutonium experiment eventually sparked the curiosity of a new generation of scientists.

In the early 1970s, Thomas Stevens remembers getting a phone call from a scientist. "He just said they were checking up on my father's medical history and would like to have his ashes to examine. He said the ashes would be taken back," Thomas said.

On Oct. 16, 1975, Albert's remains were taken from the bronze urn, packaged and shipped to Argonne National Laboratory near Chicago, according to records from Chapel of the Chimes. The shipping charge was \$42.

Argonne's now-defunct Center for Human Radiobiology asked the funeral home in an earlier letter to ship the remains as quickly as possible. Mary Margaret Shanahan, the Argonne official who signed the letter, wrote simply that the lab wanted to "carry out a series of studies" on Albert's ashes.

In their request, Argonne officials also included an authorization form that had been signed two years earlier by Evelyn. The form states that Evelyn was releasing her father's remains "for the purposes of advancing medical and scientific research and education."

Evelyn said she doesn't remember anything about signing the release form. Plutonium is never mentioned in the documents.

Argonne is a sprawling complex in Du Page County, Ill., 27 miles southwest of downtown Chicago, where plutonium patient Elmer Allen was taken in 1973. It was the national lab that coordinated and funded the 1973 follow-up studies of the plutonium patients and was in charge of the exhumation of the deceased patients.

It is also the same lab where staffers were specifically prohibited from mentioning the word "plutonium" in connection with the follow-up studies.

Scientist Robert Schlenker, now an associate division director at Argonne, said he examined the ashes of "CAL-1" when they arrived at the lab.

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Not surprisingly, he found the plutonium injected in 1945 had survived the heat of the cremation furnace and still clung to Albert's remains. "Those remains, as I recall, were a pulverized mass. It was impossible to identify what portion of the skeleton a particular piece of ash came from."

Much of the plutonium had "translocated" to points in the skeleton that were distant from cells sensitive to radiation. "I was at least able to tell that much, and that much, I think, was significant," he said.

Schlenker said he's not sure what happened to the remains after the studies were done. A 1984 Argonne memo on the experiment says only that the ashes were returned in August 1978.

"I don't know where they are," Argonne scientist Robert Thomas said recently. Thomas is closing down the Center for Human Radiobiology. "Everything I see and read tells me they were returned, but I don't know where and when."

Tom Kelsey, manager of the Chapel of the Chimes, said Albert's ashes weren't returned to the funeral home. "They left here in October 1975, and nothing's ever come back. I've gone to the location and looked. It's empty."

In Argonne's original letter to the funeral home, it had promised to return the ashes. "At the conclusion of these studies Mr. Stevens' cremated remains will be returned to you," the letter states.

Thomas and Evelyn were disturbed about their father's missing ashes. "All we can do is surmise they're in some laboratory somewhere. It bothers me that I don't know exactly where they are," Thomas said.

Said Evelyn: "It makes me sick to think of it — to use a person's body while they're still alive and then to continue. It's so ghoulish."

Some of Albert's ashes were transferred to a repository in Spokane, Wash., called National Human Radiobiology Tissue Repository, confirmed Director Ronald Kathren. The repository has samples from about 500 people exposed to plutonium or other similar radioactive elements.

Its curator, John Russell, said the samples are used by scientists who are trying to understand on a microscopic level how radioactive materials like plutonium interact with the human body.

"With improved methods and techniques for detection, we can get a better perception of where these isotopes are deposited and retained," he said.

"On a microscopic scale, we can study the radiation dose received by the cells and how that correlates with ionizing radiation to produce cancer."

The scientific questions being asked today are nearly identical to those asked nearly 50 years ago when Albert and 17 other human beings were injected with plutonium.

And Albert is still being used. □

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THE ALBUQUERQUE TRIBUNE

RADIATION KILLED DOCTORS WHO DID HUMAN EXPERIMENTS

Two of the researchers responsible for injecting Albert Stevens and Elmer Allen with plutonium died before their so-called terminally ill patients.

Elmer Allen and Albert Stevens lived to ripe old ages, becoming white-haired men who saw the births of their children's children, and then lived again each time their images fell from a scrapbook, a closet or a cardboard box.

But their doctors, two of the scientists responsible for injecting them with plutonium, died in the prime of life of radiation-induced leukemia — decades before their so-called "terminal" patients.

Scientists Joseph Hamilton and Bertram V.A. Low-Beer left no children to remember them by, no offspring to pass down their images to the next generation. Their legacy is in the thin black bylines in scientific journals devoted to the budding field of nuclear medicine.

Elmer died in 1991 in Italy, Texas. Low-Beer, the doctor whose name appears on Elmer's medical records the day Elmer was injected with plutonium, died in 1955 in Larkspur, Calif. Elmer was 80; Low-Beer was 54.

Albert died in 1966 in Santa Rosa, Calif. Hamilton, who was responsible for the program when Albert was injected with plutonium, died in San Francisco in 1957.

Albert was 79; Hamilton was 49.

Low-Beer, originally from Czechoslovakia, and the shy, secretive Hamilton both worked in the early 1940s at the Radiation Laboratory at the University of California in Berkeley. Hamilton was supervisor of the Crocker Laboratory's world-famous cyclotron, a machine that produced some of the first radioactive substances in the United States.

Hamilton and Low-Beer also were professors at the medical school at the University of California, San Francisco. They were among the first to use radioactive isotopes in the treatment of diseases.

Low-Beer is believed to have received his overexposure while with the Czechoslovakian atomic medicine program, which he headed until 1939, according to news reports.

He was educated at the University of Prague and did further training at the Curie Institute in Paris. He taught at Birmingham University in England before immigrating to the United States in 1941.

Low-Beer developed a rotational chair for the radiation treatment of cancer. He also was largely responsible for the removal of X-ray fitting machines in shoe stores after demonstrating the machines emitted dangerous doses of radiation.

Low-Beer researched the use of radioactive phosphorus in breast cancer and treatment of advanced cancer cases with the 104-inch cyclotron in Berkeley.

Hamilton's leukemia was caused by an "overdose of ionizing radiation." His death was listed as an "industrial accident" in a Feb. 19, 1957, article in the Oakland Tribune.

Hamilton was the only son of a well-to-do Santa Barbara, Calif., couple. He received his undergraduate degree from the University of California in Berkeley and his medical degree in 1936 from the University of California School of Medicine in San Francisco.

During the war years, Hamilton was a strong advocate of radioactive warfare —

spraying fields and poisoning water supplies with radioactive materials.

And he once proposed tagging secret documents with radioactive isotopes so their removal by unauthorized persons could be detected by Geiger counters hidden in elevators, doors and walls.

Hamilton touted the advantages of radioactive iodine for treatment of goiter, radioactive strontium in bone cancer and radioactive calcium for hyperthyroidism.

The more renowned of the two scientists, Hamilton was an ardent proponent of nuclear medicine, often carrying a bottle of radioactive iodine and portable Geiger counter with him when he appeared before medical groups, said Patricia Durbin, a scientist at Lawrence Berkeley Laboratory who worked in Hamilton's lab as a young student.

During demonstrations, he would pour the radioactive iodine into a water glass and then hold a Geiger counter up to the glass so the audience could hear the clicks, she recalled.

"Then he would walk across the room and put it up to himself and there were no clicks. He would drink the water, and in order to demonstrate how valuable this tool was with respect to thyroid metabolism, at the end of his lecture he would put the Geiger counter up to his neck — lots of clicks," Durbin said.

Kenneth Scott, a now-deceased scientist who worked closely with Hamilton in the Crocker lab during the war years, said Hamilton had the support of top officials

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of the Manhattan Project. Said Durbin: "He was a walker in the corridors of power."

Hamilton devoted his career to probing the damages of radiation on living tissue, and yet curiously enough, seemed to deny its effects on him, Berkeley scientist John Gofman recalled. "He was inordinately careless with his own health. He didn't seem to believe radiation hurt him in any way," said Gofman, one of the world's leading experts on low-level radiation.

Durbin agreed. "He was kind of heedless, and while there isn't any record of his total exposure, as there would be if he worked now, I would be willing to bet that his would have been if not the highest, among the highest ever recorded at Berkeley," she said. □

THE DISAPPEARING PAPER TRAIL

A file here. A few boxes there. Tantalizing references to human experiments on smudged onionskin paper. And then nothing.

The cache of documents and correspondence from radioactive pioneers Joseph Hamilton, Bertram V.A. Low-Beer, Kenneth Scott and Robert Stone is surprisingly scant.

Were their papers innocently tossed by a relative or a co-worker? Or was there something more deliberate at work?

"My sense in looking at the records is that they're only a part of a much larger collection," said Barton Bernstein, a history professor at Stanford University.

The files on Hamilton are slim. The files of Low-Beer, Scott and Stone are even slimmer at

the Bancroft Library at University of California, Berkeley.

"I've always assumed the papers have been either destroyed or hidden. I don't know whether the stuff was being hidden in the '40s by these folks or whether it got hidden or destroyed years later by other representatives who thought the stuff was embarrassing and dangerous," Bernstein said.

"It's a real puzzle."

Bernstein believes Hamilton and others involved in the human experiments "knew they were doing something profoundly dubious."

"Whether they actually thought in moral terms is very hard to know. But they knew this was the kind of information they didn't want out," he said.

EXPERIMENTS WERE CONDUCTED IN SHADOW OF NUREMBERG TRIALS

The plutonium injections were administered between 1945 and 1947, just as the world was learning of the atrocities committed by Nazi doctors in concentration camps.

Elmer Allen, the last of 18 so-called terminally ill plutonium test subjects, was injected with plutonium in 1947, the same year the Nuremberg Code was developed by a panel of judges presiding over the trials of the Nazi doctors.

Nuremberg, Germany, was the city where the Nazi Party had staged huge rallies under the leadership of Adolf Hitler. During the war crime trials, conducted between November 1945 and October 1946, the world learned of horrific medical experiments on concentration camp inmates. Prisoners were forced to breathe mustard gas and drink sea water, and were exposed to malaria, jaundice and typhus. They were submerged in ice water and locked into low-pressure cabins.

But at least a century before the Nuremberg Code, the notion that a patient should give consent for any procedures performed on his or her body already had been established. Rooted in the individualistic tradition of English common law, consent reflected one of the highest values in Western culture — individual autonomy and control over one's life.

Until World War II, most experiments using human beings were small and oriented toward helping the patient. But the notion of informed consent was jettisoned during the war when researchers frantically sought cures for ailments afflicting soldiers on the battlefield, said Columbia University professor David Rothman.

Orphans in state asylums, the mentally retarded and prisoners were used as human guinea pigs in the search for cures to dysentery, malaria and influenza. Here in the United States, the faint echoes of the Nazi experiments were present in the experiments in which conscientious objectors were used to study how heat, cold and starvation might affect soldiers at war.

"The campaign mentality not only invaded the theaters of war but the theaters of research," Rothman wrote in his 1991 book, "Strangers at the Bedside: A History of How Law and Bioethics Transformed Medical Decision Making."

"One part of the war machine conscripted a soldier, another part conscripted an experimental subject, and the same principle held for both," Rothman wrote. "In sum, the lessons that the medical researchers learned in their first extensive use of human subjects was that the ends certainly justified the means, that in wartime the effort to conquer disease entitled them to choose martyrs to scientific progress."

From about 1945 to 1965, hospital patients, prisoners, children, the mentally ill, the mentally retarded and the elderly were frequently the unwitting subjects of medical experiments. Rothman called it the "Gilded Age" of research. He attributed the public's permissive attitude toward such experiments to the stature of researchers who had discovered "miracle" cures such as penicillin.

Those researchers believed the princi-

ples embodied in the Nuremberg Code were not relevant to them, Rothman wrote. American researchers believed the concentration camp experiments were the work of Nazis — not doctors, he said.

"It's a sad commentary on what our eminent physicians were doing at the same time we were fighting Hitler," John Cobb, a retired Corrales physician, said of the plutonium experiment.

"I don't see that qualitatively there's very much difference. Quantitatively, there's a real difference, but it's a very difficult line to draw, and I think that these physicians drew it in a way that I would not have done in hindsight," said Cobb, the former chairman of the University of Colorado's department of preventative medicine and consultant on radiation issues.

Even before the last syringe of plutonium had been plunged into a human being, questions about the ethics of the experiment were being raised within the Atomic Energy Commission.

By 1947, the newly formed agency had adopted a policy of patient consent and instructed scientists that such "testing" should be administered only when there was an expectation that it would be therapeutic for the patient.

The AEC, which would become one of the most politically powerful entities in the Cold War years, was so sensitive to the possible repercussions of wartime experiments on human beings that in 1947 it

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issued an edict that hushed up the studies. Formerly classified records show the following:

- An undated chronology of the experiment in Department of Energy documents states: "After the formation of the Atomic Energy Commission on Aug. 1, 1946, doubts were expressed concerning the ethics of the study. At one time, consideration was given to referring the matter to the AMA (American Medical Association) ethics committee, but this was not done."

- March 7, 1947, AEC memorandum. The AEC's Legal Division says clinical testing on human beings should include proof the patient was in an understanding state of mind, that the nature and risks of

the treatment were fully explained and that the patient was willing to receive the treatment. A patient's written release was not required, but at least two doctors were to certify in writing that the patient understood the experiment and was willing to accept treatment.

- April 17, 1947, memorandum from U.S. Army Corps of Engineers, Manhattan District. Orders are given that no document be released that "refers to experiments with humans and might have adverse effect on public opinion or result in legal suits." Further work is prohibited and documents covering such work are ordered to be upgraded in classification to "secret."

SCIENTISTS KEPT PATIENTS IN DARK ABOUT NATURE OF INJECTIONS

They were probably told something.

But records indicate none of the 18 patients injected with plutonium was told the truth.

Plutonium was a classified word during World War II. "During wartime, investigators may have regarded any reference to the nature of the studies as a violation of security. Written statements would have constituted an additional breach of security. An atmosphere of secrecy for security reasons continued into the post-war period," said the Atomic Energy Commission, the agency that inherited many functions of the Manhattan Project.

Elmer Allen is the only patient who purportedly gave consent for the experiment. But the so-called consent form in his medical records merely states that an experimental procedure using a radioactive material was explained to him and that he agreed to it. There is no indication that he was warned of plutonium's potential hazards or even told what he was being injected with in a San Francisco hospital.

Here's what the AEC found out about the others when it investigated the question of informed consent in 1974, some 30 years later:

- The three Chicago patients. A witness said the doctor per-

forming the injections obtained the oral consent from patients after explaining the radioactive substance might prove to be of greater benefit to others than to themselves. But the doctor, when interviewed, denied any connection with the study. On the chart of one of the Chicago patients, a notation by a medical student stated "that the patient's family was eager to have the plutonium treatment started."

- The Oak Ridge patient. The patient was injected in a military hospital operated by the Manhattan Engineer District. A witness said a doctor injected the patient after receiving a written order from a superior officer. When interviewed, the senior officer said he had no recollection of the incident. The patient was not informed.

- The 11 Rochester patients. The hospital charts contained no written reference to the plutonium injections. But two interviewed physicians said they regarded the doctor who performed the injections "as a highly ethical physician and considered it almost inconceivable that he would not have provided disclosure to patients."

- The two other San Francisco patients. They purportedly were informed they "were to receive a radioactive substance having certain properties."

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• April 30, 1947, letter from the AEC to Stafford Warren, the first dean at University of California at Los Angeles medical school and the chief medical officer of the Manhattan Project. AEC officials warn treatment that may involve clinical testing be administered to a patient "only when there is expectation that it may have therapeutic effect."

• Early 1950s. References to the experiment within AEC are labeled "sticky" and are dropped from conversations.

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The turning point in what Rothman calls the Gilded Age of research came in 1966, when Harvard University professor Henry Beecher exposed a litany of horrendous experiments performed on unwitting subjects. Live cancer cells were injected into elderly and senile patients. Catheters were inserted into the bladders of newborns and then X-rayed. Infectious strains of hepatitis were administered to retarded patients.

How did it happen?

"A generation of researchers were trained to perform, accomplish and deliver cures — to be heroes in the laboratory, like soldiers in the battlefield," Rothman wrote. "If researchers created effective vaccines, diagnostic tests or miracle drugs like penicillin, no one would question their methods or techniques."

Beecher's exposé, as well as an earlier scandal in 1962 in which some pregnant women unwittingly were given thalidomide, a drug that produced deformed children, provided the impetus for new regulations, Rothman said.

In 1966, the National Institutes of Health issued guidelines for grant projects involving human subjects. In 1970, those revised guidelines were adopted by the AEC. Contractors with the AEC, such as Argonne National Laboratory near Chicago, were required to set up committees to review the use of human beings in experiments. They also were required to submit documents each year to reaffirm their intent to abide by the rules.

"The Argonne National Laboratory has formally adopted the principles expressed in the Nuremberg Code as its guide in research which makes use of human subjects," the lab states in documents dated June 19, 1970.

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Ironically, the two phases of the plutonium experiment occurred when human experimentation was a heated subject of debate. The plutonium injections were

administered between 1945 and 1947, just as the world was learning of the atrocities committed by the Nazis.

The follow-up studies on Elmer Allen, Eda Schultz Charlton and John Mouso were conducted in 1973, when the infamous Tuskegee syphilis study was grabbing front-page headlines.

The Tuskegee study, which began in 1932, involved about 400 impoverished African-Americans in Macon County, Ala., who had syphilis and 200 uninfected "control" subjects. The two groups were tracked for the next 40 years by medical investigators eager to chart the natural history of the venereal disease.

The syphilis patients were recruited with misleading promises of special free treatment, which included spinal taps done without anesthesia. The infected patients were denied antibiotics in the 1940s, even after it became known that penicillin could be used to treat the disease.

The first news of the Tuskegee study broke in 1972, the year scientists at Argonne National Laboratory were planning their strategy on how to bring Elmer, Eda and John back into a hospital to study what the plutonium injected 30 years earlier had done to their bodies.

In 1973, when the three patients were hospitalized, they weren't told they had been injected with plutonium many years earlier. Nor did they sign written consent forms for the studies.

That same year, the Tuskegee study was the subject of a series of sensational congressional hearings chaired by Democratic Sen. Edward Kennedy of Massachusetts.

A year later, in 1974, when the AEC quietly conducted an in-house review of the plutonium experiment, Congress passed the National Research Act, which mandated that institutional review boards approve all federally funded research with human subjects.

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Despite Argonne National Laboratory's commitment to follow the guidelines established in the Nuremberg Code and the establishment of a committee to review human experiments, the studies on the plutonium patients somehow slipped by unnoticed.

The committee was not consulted until after the actual studies on survivors were completed. When committee members learned what happened, they instructed the scientists and doctors to inform Elmer and the others of the long-ago injections and true purpose of the follow-up studies.

"It is our opinion that the Center for Human Radiobiology should not be involved in examination of patients believed to have a body burden of plutonium, or excreta from such subjects, unless the patients have been informed that the examination is to establish the presence or absence of residual radioactivity stemming from the plutonium that they received many years ago," the chairman wrote in a memo dated April 8, 1974.

Officials at Argonne's Center for Human Radiobiology said one reason they didn't present the plutonium follow-up studies to the lab's human use committee is they wanted to keep the plutonium experiment from becoming public.

"The nature of the studies was to be suppressed to avoid embarrassing publicity for AEC," states one document recently released under the Freedom of Information Act. □

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ELMER'S CONSENT

Plutonium patient Elmer Allen's records were the only ones The Tribune found that contained any mention of consent. It was handwritten and contained the following information:

7-18-47. 3:30 p.m.

The experimental nature of the intramuscular injection of the radioactive tracer sample was explained to the patient, who agreed on the procedure. The pat. was in fully oriented and in sane mind. Injection was given into the gastrocnemius muscle of left leg and the area marked with circle. Injection made at center of circle. Needle depth = 2 cm. No blood appeared on aspiration and no bleeding after removal of needle. At explanation of the procedure to the patient and assisting in procedure were:

*Miss Mary Wooten R.N.
Dr. Donald F. Bellamy
Dr. Ray Mullen
Dr. B.V. Low-Beer*