The call came to me in the newsroom. A man’s voice, serious, anonymous, and in a hurry. I can’t remember his exact words. But the message was clear. He wanted to report a past accident. Seven months ago, by mistake, an untrained worker on the graveyard shift turned the wrong valve and dumped thousands of curies of radioactive tritium up the stack at American Atomics Corp. in the middle of Tucson.

I heard “radioactive.”

The week before, on March 28, 1979, the worst nuclear power plant accident in US history had shaken Three Mile Island in Pennsylvania. National news reports revealing how close the reactor core had come to a complete meltdown contradicted the nuclear energy industry’s claims that a deadly radioactive release to the environment could never happen.

Days before in Arizona, there had been press coverage of the state’s regulating agency’s issuing four violation notices against American Atomics for failing to control its routine emissions during operations. Out of the public spotlight in a building that looked more like an insurance office than the largest factory in the state licensed to hold nuclear materials, 200 workers made sealed glass tubes of tritium that illuminated digital watches for such name brands as Texas Instruments and Timex.

Only the month before, I had started the first full-time environment beat at the Arizona Daily Star, where I had worked for 10 years writing enterprise feature stories. Worst of all, I asked myself at that moment, why had I only majored in journalism and English in college instead of science. What was tritium?
This scene from 40 years ago in the early days of environmental reporting in the United States led to classic lessons that have served as the foundation for decades of investigating tips on the dangers of chemicals in science fields foreign to me.

Journalists — then and now — face the phenomenal challenge of overcoming what might be a paralyzing obstacle in pursuing a story: our own ignorance of the growing body of scientific knowledge. No one of us is prepared in the full array of fields we need, among them chemistry, toxicology, biology, epidemiology, genetics, hydrology, geology, atmospheric physics, oceanography, and nuclear engineering.

But, ultimately, top environmental reporters do find academic and on-the-job professional experience that fosters the essential qualities of skepticism, accuracy, honesty, persistence, and dedication to the craft.

Tongue-twisting pollutant names, mysterious health effects, and complex climate models are something to be learned and not feared. No matter the story, the ability to conduct research, evaluate studies, locate top sources, expose lies, and write clearly equips reporters to ask the questions that get to the truth. Most likely along the way, a solid reporter will challenge industry or government and the power structure that supports it.

“Radioactive gas escape at Tucson plant revealed”

A week after the tip, the April 15, 1979, Easter Sunday front page headline of my American Atomics story declared in modest-sized type below the fold, “Radioactive gas escape at Tucson plant revealed.”

Let me skip to the end, five months and 50 stories later.

Arizona Gov. Bruce Babbitt, under emergency powers previously used only for natural disasters, seized the American Atomics plant. Babbitt, cleared by a judge, ordered the Arizona

Figure 10.1 “Tritium-laden convoy slips out of Tucson at 2 a.m. under heavy guard,” published by the Arizona Daily Star, September 30, 1979. The headline of the story reads, “Convoy delivers tritium; tiny leak discovered.”

Source: Photograph by Jack W. Sheaffer, published with the permission of the Arizona Daily Star.
National Guard under supervision of state nuclear regulators to confiscate the 550,000-curie inventory of leaky tubes, flasks, and drums. Stealthily in the dead of night on Sept. 29, 1979, a half-mile-long cavalcade of trucks rumbled out of Tucson carrying the cargo to a US Army ordnance depot near Flagstaff in northern Arizona. Five uniformed highway patrolmen and six SWAT team members stayed with the convoy from 2 a.m. to the arrival 11 hours later, guarding the Super Tiger, a 45,000-pound steel box as big as a house, which held the 38 barrels filled with tritium. Those barrels would be stored safely in an earth-covered steel-and-concrete bunker until returned to the source, Oak Ridge National Laboratory in Tennessee.

What it took to get that story in the paper taught me both the institutional barriers to an environmental story and the documentation necessary to make it worthy of publication.

The scoop

Flashing back to that telephone tip, the big question remained: What was tritium? I unrolled the periodic table of elements I kept behind my desk post-Three Mile Island. There it was: tritium, a radioactive gas, also known as deuterium-3.

My first call to the University of Arizona’s Department of Nuclear and Energy Engineering turned up Norman Hilberry, a famed nuclear physicist who had worked on the Manhattan Project, the country’s early effort to build an atomic bomb during World War II. He directed the prestigious Argonne National Laboratory under President Dwight D. Eisenhower before accepting the Tucson teaching position in the early 1960s. He was a commissioner of the Arizona Atomic Energy Commission, the agency that regulated American Atomics.

Professor Hilberry, during my visit, assured me that the tritium release was nothing of concern. The light hydrogen gas would disappear in the atmosphere, float away, he said, with a wave of his hand. I left the interview with the impression of “poof,” no big deal.

The research could have ended there. But if dumping tritium to the environment didn’t matter, why in the week before had the state sent violation notices to the plant directing it to better monitor and control its daily releases from manufacturing? I also knew that this would not be the first dismissive reaction to radioactive fallout issued by a nuclear scientist who felt obligated to promote the besieged industry. The popular thriller film, The China Syndrome, released early that year, followed by the real Three Mile Island partial meltdown three months later, added to the defensive position of both government and business.

So, I called the Union of Concerned Scientists, a respected watchdog non-profit with experts on nuclear energy. Founder Henry W. Kendall, a Massachusetts Institute of Technology physicist, had a sound reputation for advocating nuclear reactor safety. Kendall was later awarded a Nobel Prize for his part in proving the existence of building-block quarks in the protons and neutrons of everyday matter. Scientists there provided the rare name of a tritium expert, Craig Swick, who consulted at the Environmental Policy Institute, a national public interest group in Washington, DC.

Over the phone, Swick was shocked at the curie loss from stacks in the middle of town. Of the 21,000-curie accident, he said, “That is a lot, an incredible amount. A release of [radioactivity from] a nuclear power plant, under normal conditions, is one-tenth of that.” He also told me enough to validate the story. There is no “poof.” As a hydrogen gas, it doesn’t disappear but combines with all other hydrogen in the environment. Tritium emits beta radiation, which is weaker than potent alpha radiation but can better penetrate soft tissue. People can inhale and ingest it and absorb it through the skin. Once in bodily fluids, all of the cells are exposed to cancer-causing radiation.

I went to American Atomics with my findings. Peter J. Biehl, president, confirmed the heretofore-unreported accidental release to the environment. He also confirmed other allegations I had since
gathering. Tainted pump oil from a machine soaked the pants of a worker, Hugh Baxter, and his urine test revealed high levels of tritium. Also, alarms indicating excessive radiation rang routinely at the plant, leading to workforce evacuations long enough to vent the tritium up the stacks.

My April 15 story lede was terrible. Due to my inexperience as an investigative reporter and the news desk’s demand for extreme caution, I signed off on a weak passive-voice sentence, making it sound as though Biehl had come forward on his own. It read: “A puff of radioactive tritium – measuring more than one-third of normal emissions for three months – was released from the stacks of a Tucson manufacturing plant early last September, according to the firm’s president.”

The rest of the story was fine. On the front page before the jump, I used Swick’s comment that, “Having any radiation there [in the middle of town] isn’t a good idea because all radiation is dangerous,” and described tritium’s ability to enter the human body and irradiate cells. I reported the proximity of the school district’s central kitchen, a potato chip factory, a church, a day care center, and neighboring homes. I also revealed the injury to Baxter and the daily alarms. Swick said an alarm’s going off even once a year was unusual, and that Baxter should have been given protective clothing that shielded against spills. I quoted Lynn FitzRandolph, a health physicist at the Arizona Atomic Energy Commission, saying he had no idea the alarms were ringing daily. FitzRandolph contradicted Biehl’s assurance that the big accident had been reported. Biehl said he wasn’t worried because “the safeguards are there. The performance here is super, and we’re within established standards. If we were a safety hazard, we’d shut down.” Two days later, American Atomics held a press conference. Its senior health physicist admitted the biggest accident in the corporation’s history the September before was caused by “a maintenance worker on the graveyard shift who opened the wrong valves.”

**Roadblocks**

The roadblocks to advancing the story lay before me, an A-student in liberal arts. Data were scarce. Hard to believe, neither the Arizona Atomic Energy Commission nor the US Nuclear Regulatory Commission conducted routine on-site or off-site monitoring in Tucson. For the past 13 years of operation, the state used the corporation’s figures to make theoretical calculations of stack emissions. As for health effects, there was a dearth of studies examining biological effects of tritium on humans or laboratory animals despite the fact that it was the by-product of commercial nuclear reactors and American Atomics received its inventory from a federal weapons lab. I struggled to find independent experts knowledgeable about tritium and low levels of radiation. A local radiologist, Dr. Andre Bruwer, who worked in his own field to decrease radiation dosage from mammograms, steered me to eminent University of California, Berkeley molecular and cell biologist Dr. John W. Gofman, whose estimate of cancer risk from radiation was greater than official numbers. Bruwer tried to help me with the language I needed to explain in a newspaper that while a picocurie was a trillionth of a curie, the precautionary path was to avoid all unnecessary exposure. So, 40 years ago, I chose the precautious path when it came to reporting environmental stories.

On my own, I not only had to fight my own ignorance of radioactivity, I also had to fight the desk’s prejudice. Questioning the veracity of the nuclear energy industry was considered a counter-culture activity tantamount to opposition to the Vietnam War a decade earlier. In fact, all environmental stories were suspect.

I imagine that my situation then was similar to what it is like now in countries that don’t have a press that names polluters or cites independent experts with scientific credentials sufficient to challenge corporate interests.
In the 1970s in the United States, the subject of planetary degradation was like a red flag to many political conservatives who lumped it with women’s liberation, gay rights, and smoking marijuana. Environmental stories were viewed as an expression of a social movement rather than an examination of potential human, ecological, and economic harm from an event. Investigative environment stories had to withstand the criticism of “advocacy.”

Sitting at my desk pounding away at my Coyote computer on my next American Atomics story, I recall copy chief John Rogers walking up to me holding in the air a sheet of paper. He’d watched television news. First, he heard the typical nuclear energy pitch that the radiation exposure from tritium wouldn’t equal sitting close to a color cathode-ray-tube TV or taking an airplane flight to Denver. Then, he saw a representative of American Atomics display paper and claim tritium couldn’t penetrate it, which I later learned was false. True, tritium didn’t give off gamma rays, I weakly explained from my research. Hydrogen-3 was a beta emitter, a gas that transformed to water vapor. People could inhale, eat, or absorb it through the skin. Inside the body, tritium combined with bodily fluids. The radioactivity could damage cells and trigger cancer and genetic mutations. He clearly didn’t believe me.

And then came the “sunshine” cake.

The contamination

Across the street, 100 yards from American Atomics’s stacks, lay the largest food facility in the state. Tucson Unified School District’s central kitchen shipped meals every weekday to 40,000 students in 99 elementary, junior high, and high schools. Facing the public outcry for information, government regulators finally showed up at the kitchen, and found tritium in the food. The chocolate “sunshine” cake served the week before to 28,000 kids contained nearly three times the federal limit established for tritium.

The US Environmental Protection Agency released the bombshell test results six weeks into my investigation. By then, I had written a dozen stories on growing public unease, on American Atomics’s past dumping of radioactive water into the sewer system, and on apparent conflict of interest by the corporation’s vice president, Harry H. Dooley Jr., who also served as a regulating commissioner. But it was the widespread contamination of people and property that foretold the end for the atomic operations in Tucson.

The cake’s level of 56,000 picocuries of tritium per liter compared to the EPA’s maximum contaminant level of 20,000 picocuries per liter in drinking water. Barbecue sauce, Sloppy Joe mix, cake, donuts, and hamburger buns – five of the six samples taken – tested above or near 20,000 picocuries.

The acting director of the Arizona Atomic Energy Commission, Kenneth R. Geiser, agitated the public even more with his medically inaccurate comments. “Low-level radiation of this order of magnitude is a questionable kind of danger,” particularly because children “somehow aren’t harmed by chemicals or radiation as much as older persons.”

The kitchen was immediately closed. In an emergency meeting, the commission suspended the plant’s permanent license, and under a temporary license, ordered production cut in half. City and county health officials and Pima County Board of Supervisor Raul Grijalva, a future Democratic congressman from Arizona, wanted a full shutdown while the plant was investigated. But they didn’t get it. Instead, they got the promise of a hearing in two weeks.

In the meantime, tritium test results made headlines. Two blocks away from American Atomics, the Senior Now Generation operated a kitchen that served 28,000 meals every month to the elderly in 18 centers. Tritium in Jell-O measured 40,000 picocuries per liter, twice the level considered safe. The kitchen was closed.
Six hundred feet from the plant, minutes before the swim team jumped in the pool at St. Ambrose Catholic Church, the pastor learned the water contained 51,000 picocuries per liter. The pool was closed.

Inspectors set up appointments to test neighbors within two blocks of American Atomics. I walked the streets, and found Mary and Joe Valenzuela, who lived in the neighborhood for 30 years, tending fruit trees, grilling carne asada, and entertaining their children and grandchildren, all in their backyard, over the fence from American Atomics.

“You know the prevailing winds are south to southwest, and we’re right here,” Joe Valenzuela told me. “They tell you X-rays are worse. Come on, I’ll take my chances at the hospital. We have no defense against this.”

The school district’s kitchen closed on receipt of the cake findings, Valenzuela said, “The employees work eight hours, and wear coats and gloves. But my wife is here 24 hours. What about her kitchen?”

He didn’t find out until weeks later from a university radiation officer that the plums on their trees tested at 830,000 picocuries per liter, more than 41 times the recommended safety level. In preliminary testing, his urine measured 310,000 picocuries per liter and his wife’s at 122,000 picocuries per liter. The water in their air-conditioning unit contained concentrations of 1,490,000 picocuries per liter.

Valenzuela recalled that his wife had talked to an American Atomics staff member about possible dangers after the plant was built. “They told us they were making little components. They never said they were using radioactive materials. . . . No one knew,” Valenzuela told me.

Next door neighbor to American Atomics, Walter Bruckmeier, told me he didn’t know the alarm bells he heard ringing daily at the plant meant the problem was solved by sending

Figure 10.2  “Walter Bruckmeier and 6-year-old Tony,” published in the Arizona Daily Star on June 12, 1979. The headline for the Jane Kay story reads, “City votes to close tritium plant if AEC doesn’t.” The story reported that abnormal levels of tritium had been found in the boy’s urine. Source: Photograph by Joe Patronite, published with the permission of the Arizona Daily Star.
radioactive particles up the stacks he saw from his house. All nine of his children swam in the nearby St. Ambrose pool. He was frantic when he learned that his youngest, Tony, 6, had a tritium level of 89,100 picocuries per liter. The control urine specimen from a Phoenix engineer present at the testing measured 645 picocuries per liter.

When the commission’s acting executive director, Geiser, gave him the results, Bruckmeier said Geiser “shrugged it off. He acted like it was nothing important. Maybe people who work at American Atomics are accepting this risk, but we’re not. We’re just living here.”

One neighbor’s swimming pool had concentrations of 413,000 picocuries of tritium per liter; another’s 73,400 picocuries per liter, a little higher than the owner’s urine count.

Again, I struggled to find independent experts who could inform us what these levels meant in terms of health. Getting nowhere with state and federal officials, I turned again to Swick. He shared a disappointing letter he’d received from a German tritium expert at the University of Bremen, Dr. Volker Kasche, who said one of the real problems was that no one really knew what happened when tritium got into the environment.

The amount of tritium in the chocolate cake, while “an incredible amount” was “not in itself a health hazard,” Swick said. But if every person in Tucson ate a piece of the cake every day, “we’d find some cancers.” That was not reassuring for parents. The children in the school district, my two sons included, had been eating cafeteria food every weekday for years. The high tritium levels in the food indicated that “we’re talking about large enough doses in the environment that can be inhaled in tritium-filled air or in the decay coming from the ground,” he said.

“The danger is that tritium gets into the nucleic acid, or the genetic material, of the cells. What this means is that it may be a much more serious hazard than people are accounting for.” When tritium decays, as all radioactive materials do, it can cause damage to the genetic structure, he said. “That’s what causes cancer, mutation, genetic defects, and so on.”

While I was writing at my desk that night in June 1979, the Tucson City Council voted to go to court to close American Atomics within 72 hours as a nuisance if the state failed to do so. The news desk ran the story at the bottom of the front page with a bold face bulletin under a modest headline. I’d like to think it was too late to rip up the page, but I knew better. The banner headline blared what the desk considered a more important story, “John Wayne dead of cancer.”

Revelations

On a tip from an environmental group, Nuclear Free State, I found documents from the Arizona Atomic Energy Commission that revealed a startling case of what looked like conflict of interest. Harry H. Dooley Jr. served as American Atomics vice president while he was a commissioner. He accompanied the inspection at the plant in August 1978 that discovered the serious loss of tritium that year. The commission staff subsequently sent a letter to Dooley about the problems, but he never shared that information with other commissioners at the two meetings before his term ended in January 1979. At the inspection, the state health physicist FitzRandolph, using the corporation’s figures, found that over a year the plant exceeded the maximum permissible concentrations from 11 to 21 different times. As much as 80% of the tritium was going up stacks used to clear the air in a filling room. It wasn’t until the commission’s director, Donald C. Gilbert, resigned in March 1979 that the inspection team returned to American Atomics and issued the violations. In my May 20, 1979, story, “Tritium-loss report held for seven months,” I quoted Gilbert as saying Dooley’s presence on the commission had no bearing on the commission’s failing to take action for seven months. The large amount of unaccounted-for tritium, he told me, “didn’t seem a very big deal.”
There are sensitive moments in environmental and other beat stories. When it is evident that you’ve got a big one, the designated investigative reporters start to circle. As a woman in the newsroom in the 1970s, I learned to fight off sharks that wanted to completely take over my stories. At the same time, a team effort is superior to a one-woman show. Reporter Bob Lowe, who two years later won a Pulitzer Prize with his reporting partner Clark Hallas for discovering misuse of college football funds, contributed two terrific American Atomics stories.

A month after my Dooley story, Lowe figured out that during the lapse of seven months between the damning August 1978 inspection and the March 1979 notice of violations, American Atomics was able to complete its merger with the James Dole Corp. The delay of revealing the mishandling of tritium may have served Dooley financially. In January 1979, five months after the state inspection turned up the tritium losses, Biehl had signed the closing merger agreement assuring that the company had “to the best of its knowledge” complied with all laws and regulations, had not received any notice of having violated any regulations, and that its plant and equipment were “in good operating condition.” In addition, American Atomics knew that the Occupational Safety and Health Administration was investigating Baxter’s complaint of injury. In December 1978, the company had made similar “no knowledge” statements to the US Securities and Exchange Commission.

Lowe also documented that American Atomics had operated for 13 years – from 1966 to 1979 – virtually unquestioned by city zoning officials about its commercial activity using nuclear materials. For the first seven years, they didn’t know the plant used radioactive materials, and during the next six, they didn’t realize American Atomics was holding big inventories of tritium and routinely releasing emissions. Lowe pieced together that information from records and interviews.

**Mounting pressure**

Nationwide pressure was mounting. I learned that the US Nuclear Regulatory Commission, immediately after the community contamination news broke, sent the first of two communications to Gov. Babbitt and the Arizona Atomic Energy Commission saying the state should pull American Atomics’s license to operate while it was investigated. The NRC closely monitors tritium because it is used in the triggers of atomic bombs. Neither letter from the NRC’s State Agreement Office had been released to the public.

Democratic Sen. Dennis DeConcini and House Rep. Morris K. Udall started questioning publicly whether the federal NRC should have greater authority over state agencies or go so far as to take back the state’s regulatory authority. DeConcini wrote to the NRC, “American Atomics has been mentioned in the press for some time as being in violation of various health and safety regulations, yet the . . . commission has failed to act. As a result, Tucson finds itself in the ludicrous situation of having school cafeterias closed, swimming facilities closed and residents living in great fear of radioactive contamination while the cause of the situation is allowed to continue to operate.” Babbitt responded that he decided against closing because he was advised there was “no short-term health hazard from the plant.”

On June 13, 1979, the county joined the city in declaring that if the state atomic energy commission didn’t shut down the plant, it would seek to close it as a criminal nuisance.

Babbitt, saying three hours of NRC discussions in Washington had changed his mind, reversed his decision. In negotiations, American Atomics offered to leave the city on its own timetable, arguing that it was following the law and its emissions had no biological consequences. But Babbitt said he would seek a suspension order from the Arizona Atomic Energy Commission, which he got on June 16.
I and an abundance of other press turned up for the long-awaited state atomic energy commission hearing on June 16, where American Atomics would, as its president Biehl said, “fight for its life.” State commission staff and representatives of federal and local agencies, the school district, and church leaders, would testify. Nuclear Free State, a nonprofit of 500 members, was barred from testimony along with other members of the public. The hearing lasted more than a week.

An American Atomics lawyer, Harold C. Warnock, started off by saying he felt the press coverage of the firm’s plight had been “hostile and unfair,” and that local newspapers had “created facts.” He added, “You people haven’t done a god-damn thing to get the correct information.” Warnock was a member of the same law firm that represented the Arizona Daily Star.

EPA’s top radiation expert, Alan Moghissi, told the panel of state commissioners that the stack loss in the last nine months of 1978 surpassed the tritium release of all 72 of the US nuclear reactors. American Atomics should not continue to operate in populated areas, Moghissi said. The dose to an individual in the area would be minute, but people should have the right to decide if there was a compensatory benefit to the risk of increased radioactivity in the body.

American Atomics reported losing nearly 254,000 curies in 1978, which would equal one-fourth of its inventory, according to Richard E. Cunningham, who directed the NRC division of fuel cycle and material safety. It showed “obviously something wrong in the system,” he said.

The NRC, already under fire for the accident at Three Mile Island, confirmed in interviews that if Arizona didn’t move on American Atomics, it could take back the regulatory authority it bestowed the decade before. Close to home, the Palo Verde Nuclear Generating Station, which would be the largest nuclear power plant in the nation, was under construction 45 miles west of Phoenix. The federal government and the Arizona and California utilities didn’t want to see more public protest around the handling of radioactive materials, I was told by several political leaders.

“The sorriest license I have ever issued” is how Arizona Atomic Energy Commission senior health physicist, Lynn FitzRandolph, described American Atomics at the hearing. “The management’s philosophy seems to be, ‘It’s only tritium. It’s very difficult to measure. No one really cares anyway. So, let us proceed to make plenty of light sources and worry about whatever comes when it comes,’” he told the panel of commissioners. The corporation couldn’t tell him how much went up the stacks and into the environment as tritium water vapor, which comes under a stricter standard than tritium gas.

Regarding the charge that American Atomics failed to divulge the big loss of 21,000 curies September 4, 1978, the state didn’t receive the report until seven months later. That was 11 days after the Arizona Daily Star’s Easter Sunday story revealed the accident. As to the charge of discharging radioactive wastewater into the sewer system above allowable levels, FitzRandolph testified that the tritium—down-the-drain amount totaled 11,000 curies of tritium over a three-month period. The license limit was 1 curie over a year, he said.

When American Atomics senior health physicist David L. Duke took the stand, an assistant attorney general representing the commission staff expressed shock that Duke hadn’t revealed to the state alarming samples he had gathered two months previously. Water near the school district’s kitchen measured 626,000 picocuries per liter. On the plant’s site, Duke had found a reading of 1,480,000 picocuries per liter.

In Duke’s answers to hundreds of questions over three days, he would not say how many curies were dumped down the drain. Nor would he say how much tritium was released into the air through the stacks, nor what percent was gas or what percent was water vapor. He wasn’t concerned about the size of the loss over a three-month period in 1978 because “it looked below MPC (maximum permissible concentration).” Duke was measuring not at the stack but
at the fence line, which wasn’t allowed. And he was using the standard for tritium gas when he should have been using the 200 times stricter standard for tritium water vapor, I reported.

Three months on the story, and I could write with confidence:

The controversial tritium, a form of hydrogen, is emitted into the atmosphere as a gas, which quickly converts to tritiated water vapor. It combines easily in organic materials and, as with other hydrogens, becomes part of cellular structure. The company has said because tritium emits low-energy particles, it is recognized as one of the safest isotopes. But scientists critical of large emissions that have fallen on the neighborhood say once tritium is inhaled, ingested or absorbed into the body, it can expose all the cells to radioactivity, which might cause cancer or genetic damage, even in low doses.

(Kay, July 12, 1979)

On what was to be American Atomics’s first day of defense, July 11, 1979, at the state hearing, Biehl offered to surrender its license to handle radioactive materials. City and county officials had turned down its request the day before to move to a plot 15 miles away on the edge of town. The Arizona Atomic Energy Commission gave the corporation 100 days to get out of the state.

Breaking more stories

New revelations continued around the beleaguered plant, and by now the news desk was copyrighting my scoops. Three months into the story, the dynamic had changed. Instead of teasing me as Jane Fonda, the TV news reporter in The China Syndrome film, the news desk editors took what I considered the appropriate role of asking all the right questions to test the validity of my findings. My immediate editors on the city desk always had been helpful, and now advised me how to handle anonymous sources that I needed to both verify and protect.

A former worker who had been scheduled to testify at the hearing before American Atomics dropped out told me that the management instructed employees to forge leak-test data on outgoing shipments. A half-dozen faked tapes, or “dummy tapes,” were created and used over and over to produce hundreds of faulty records indicating shipments of digital-watch backlights had been tested successfully. I kept the employee’s name out of my July 18, 1979, story, but followed up with Arizona Attorney General Bob Corbin, who told me the evidence had been sent to the NRC. City and state lawyers traveled to Texas Instruments in Lubbock to check on the shipments. In August, the NRC ordered American Atomics’s customers – seven manufacturers and distributors – to conduct a series of leak tests (Kay, 1979, August 29).

On July 20, 1979, I broke another story. American Atomics sent radioactive materials on airlines at least 10 times without disclosing the contents of the packages, a former employee told me. Shipping radioactive contents without informing the airlines violates federal law and carries heavy fines and prison time of up to five years. She gave me her name, Barbara Simpson. She had been subpoenaed to testify by the City Attorney’s Office at the state hearing that ended July 11, 1979, when the corporation pulled out. Five times Simpson was ordered to check in over-the-counter packages as “watch parts” when each contained 1,000 tiny pairs of nuclear-powered light sources, she said. After she learned from shipping companies the practice was illegal, she told three management personnel but was ordered to do it anyway, she said. Another employee who asked to remain anonymous corroborated her account. The corporation did it to save time. Sometime airlines would temporarily bump packages holding radioactive materials if they didn’t fit with other cargo on the flight. Simpson also informed Biehl about the shipping problems when she quit after nearly four years, in December 1978. “It was just brushed off as though it was nothing,” she said.
Unpopular scientists

One of the most difficult calls as a new environment reporter was how to handle an outspoken scientist who had made impressive contributions in his field but was far outside the mainstream of government policy and philosophy.

Ernest J. Sternglass, professor of radiation physics at the University of Pittsburgh School of Medicine, was coming to Tucson in July 1979 to present his preliminary findings linking American Atomic’s radioactive emissions to the unexplained rising rate of infant deaths, low-weight births, and stillbirths in the county.

Sternglass was in the news for contradicting the NRC’s assurances of the safety of leaks from Three Mile Island. In the days after the accident, he took measurements around Harrisburg and with other critics warned of health risks, particularly to pregnant women and children. The week before the Three Mile Island accident, he testified in court based on his examination of Nevada atomic test fallout maps that the US government lied about the true 1950s exposure to military personnel.

I decided to give him his say. Sternglass had the support of his university and had been quoted over the years by respected journalists. He was the author of the 1972 book *Low-Level Radiation* and some 100 scientific papers on nuclear physics and biological effects of radiation. His research, among other contributions, led to precautions over medical X-rays harming a woman’s fetus. Such supporters as Nobel laureate biologist George Wald said Sternglass made strong cases while sometimes appearing to go too far.

My first story, July 17, 1979, announced he was coming to speak about his findings at the University of Arizona. The second story, July 19, 1979, covered his study, including a county epidemiologist’s saying the local health officials hadn’t compiled enough data to attribute the rise in fetal deaths to any one cause. That story also described how both federal and state officials tried to discredit his study before they saw it. Prior to his visit, the state sent out a press release using a statement made by Sternglass eight years before. I had a quote from a staff person at the Arizona Atomic Energy Commission who said, anonymously, that it was “Geiser’s project,” adding that acting director Geiser considered Sternglass “an enemy.” In the third story, on August 24, 1979, the epidemiologist, Bruce W. Porter, disputed Sternglass’s ongoing study. The fetal death rate did rise in the 4,000-resident census tract area near American Atomic, Porter said. But the fetal death rate rose as much or more in a few other control areas not close to the plant.

What vetting would I add today now that I’ve evaluated hundreds of studies and conducted my own health study of the solvent trichloroethylene in Tucson’s drinking water? I would know how to look at Sternglass’s and Porter’s work in detail, for example the location and demographics of the census tracts picked as the downwind and control ones. The biggest questions are how they would compile exposure data. They’d have to find what years the tritium was coming out of the stacks, how much and in what form, and how long the women had lived in those tracts before and during pregnancy. Sternglass’s great contribution was courageously raising the question. No local, state, or federal official wanted to probe for community health effects, or ever did.

In the meantime, American Atomic was making no headway in moving to destinations in Mexico and Nevada. The school district lost hundreds of thousands of dollars on the tainted food and searched for a landfill that would take it. Laid-off workers complained about the press turning their workplace into a Three Mile Island. The year that was forecast for record sales of $10 million turned into a bankruptcy reorganization. And tritium leaks continued from the plant as it was packed up to move, and so did high measurements of tritium in the neighbors’ bodies.
“What was tritium?” Conquering our own ignorance

The NRC made good on its threat to come down on the state, demanding the following legislative changes if it expected to keep its authority to regulate: Ending its job of promoting the nuclear industry along with regulating it, adopting conflict-of-interest standards for commissioners, and expanding its ability to impose fines and fees as well as to require evidence of financial responsibility. State atomic energy commissioner Hilberry, my first interview, who presented the “poof” theory, strongly supported the NRC recommendations at a meeting. “It is clear that we should have caught this long before it got to the critical state.”

Lessons

Don’t trust just one source. If I would have stopped with advice from a respected nuclear physicist, Tucson children might still be eating tritium.

Follow up all tips. When the phone rings, answer it. Check out plausible stories like lost tritium, faked product tests, and illegal shipments.

Go for scientists respected by their peers and free of financial gain or professional pack loyalty. Find the experts that advance a protective approach to people and the environment. They can evaluate the quality of government regulations, which can change with political administrations. Even now, an NRC 2017 backgrounder on tritium in exit signs says, “If inhaled, it leaves the body relatively quickly.” In Tucson, the majority of 50 American Atomics workers who were tested nearly two years later showed tritium in their urine at levels at least 10 times greater than unexposed persons, some 20 times greater. Physicians estimated at least 10 years before they would be free of it.

Be skeptical. Everyone can lie, including industry and government. The plant owners changed their stories over weeks, and some government officials grossly minimized the potential dangers.

Fight for what you believe. But don’t believe it until you document it. Stand up to the editors, but work with them to benefit from their ideas, experience, and dedication to balance.

Accept help and stay on the story. Investigative and other reporters may contribute strong stories. Don’t forget to check in years later. The Carter administration granted $170,000 to start a worker study by the Arizona Center for Occupational Safety and Health. The Reagan administration let it die after a year. I was on to other stories and didn’t run it down.

The deep lesson is that no research is wasted. What I learned at American Atomics gave me the groundwork for the science and the politics I needed covering the scourge of uranium mine tailings on the Navajo lands. I used knowledge and sources to report on cases of child and adult leukemia in Mormon towns of Colorado City, Arizona, and St. George, Utah, linked to atmospheric atomic bomb blasts at the Nevada Test Site. That difficult research into US policy on nuclear weapons material like tritium helped me later investigate the real exposure to “atomic veterans,” among them servicemen who were dropped in Nagasaki after the 1945 bombing at the end of World War II, or who watched from nearby US Navy ships the hydrogen bomb tests on Eniwetok Atoll in the South Pacific in the 1950s.

As I stood in the dark, deserted street outside American Atomics and watched the parade of unmarked military trucks creep out of town that September night in 1979, I knew that we would never know what babies, what children, what workers may have been harmed from sloppy, unregulated practices at this plant. But I did know I had worked harder than I thought I could. I had to conquer my own ignorance. But if I did it once, I could do it again, and again, and again.
Figure 10.3  "Tritium will be out of Tucson by tomorrow," article written by Jane Kay and John DeWitt for the Arizona Daily Star, September 28, 1979. Photo caption reads: "Guardsman wheel drum filled with broken glass tubes of tritium to storage area."

Source: Photograph by Doyle Sanders, published with the permission of the Arizona Daily Star.
Epilogue

This investigation of American Atomics was voted the state’s top story of the year by newspaper and broadcast members of the Associated Press, and the Arizona Press Club awarded Jane Kay the Don Bolles Memorial Award for Investigative Reporting.

References