



Window on State Government

Susan Combs Texas Comptroller of Public Accounts

El Cobalto

← Back to
Bordering the Future

For eight weeks in late 1983, Vicente Sotelo Alardin's pick-up, sidelined by a flat tire, sat parked on a back street near his house in Ciudad Juarez, across the Rio Grande from El Paso. Countless people passed by it each day, and neighborhood children climbed into the truck bed to play games.

No one knew the truck was dangerously "hot." From a distance of less than one meter, it emitted 50 rads an hour of radioactivity, enough to reduce the number of white blood cells that protect the body from infection and to inflict at least temporary damage to the chromosomes of anyone close by.

Sotelo's truck wasn't the worst of it, though. Officials on both sides of the border soon learned that the part-time electrician and hospital handyman had become a link in a chain reaction representing what is now acknowledged as the worst radioactive contamination in North American history.

Because the spill was so unusual, its full dimensions were difficult to measure. Unlike most nuclear accidents, in which a handful of people are exposed to brief bursts of high radiation, the Juarez incident involved thousands of people exposed to low levels of radiation over an extended period. Even so, the 200 or so residents in the immediate area received the largest radiation doses on public record. Measured in terms of the total number of people exposed, the Juarez incident fell somewhere between the partial meltdown at Pennsylvania's Three Mile Island reactor in 1979 and the 1986 accident at the former Soviet Union's Chernobyl nuclear plant.¹

The trouble had begun two months earlier, when Sotelo was sent to haul away some unused material from a warehouse operated by his employer, the *Centro Médico* in Juarez. Among the several pieces of equipment Sotelo and a coworker transported across town to the *Jonke Fénix* junkyard was a 20-year-old Picker 3000 radiotherapy machine that the hospital had purchased from the X-ray Equipment Co. in Fort Worth, which had in turn bought the unit

from Methodist Hospital in Lubbock. Once in Juarez, the machine had languished in the warehouse for lack of a qualified technician to fix it.

Sotelo's mistake was in pilfering an unmarked capsule from the load and throwing it into the back of his pick-up truck. Later, when he pried open the capsule, out spilled 6,010 small, silvery pellets that looked like cake decorations but were in fact loaded with high levels of the radioactive cobalt 60 isotope. Some of the pellets rolled into the truck bed and onto the road. Others remained inside the capsule, which Sotelo took to the junkyard and sold as scrap for the peso equivalent of \$9. There, the capsule was dumped near a huge magnet used to load scrap metal onto trucks bound for two northern Mexico foundries.

According to investigators, each pellet in the capsule was capable of producing a dose of 25 rads per hour.² As the junkyard magnet moved the scrap metal around, the pellets were mixed with other materials, pulverized, and spread across the area. Others became imbedded in truck tires and were then jarred loose along highways. An estimated 300 curies of radioactive cobalt found their way to the two Mexican foundries, one of which manufactured metal table legs for shipment to the largest distributor of restaurant tables in the U.S., while the other produced steel rods used in the reinforcement of concrete building projects. About 600 tons of the contaminated steel were shipped to the U.S. from December 1983 to January 1984.

Then, on January 17, 1984, a radiation alarm went off when a delivery truck took a wrong turn near the gates of Los Alamos National Laboratory in New Mexico. Later in the month, a different truck--this one transporting table legs--set off a radiation monitor in an Illinois State Police officer's patrol car.

Authorities eventually traced the radioactivity to the Juarez junkyard, where tests established that the capsule had been delivered on or before December 6--a date fixed with certainty because all paperwork generated at the site *after* that date turned out to be radioactive. Authorities immediately closed the junkyard and impounded Sotelo's pick-up. It took another two months to mop up the *Jonke Fénix* and track down the contaminated table legs and rebar steel at sites in Canada, Mexico, and 23 different U.S. states, including Texas.

Mexican health officials also ordered the demolition of 109 houses built with reinforcing rods containing the radioactive material in the western state of Sinaloa. Because pellets might have fallen anywhere on the roads between Chihuahua and Juarez, officials flew over the area in a special reconnaissance helicopter on loan from the U.S. Department of Energy. They found 22 radioactive sites and actually dug eight pellets out of the highway asphalt. And to prevent any

more tainted steel from entering the U.S., the federal Nuclear Regulatory Commission and Customs Service officials installed radiation monitors at all border crossings.

Although the use and transfer of nuclear devices are strictly regulated in the U.S., international sales weren't monitored. In the case of the sale of the Picker 3000 radiotherapy machine, no U.S. laws had been skirted. Brokers were under no obligation to notify Mexico's nuclear authorities or to check into the competence or licensing of the purchaser. The *Centro Médico* may have violated Mexican regulations when it failed to notify that country's National Commission on Nuclear Safety and Safeguards that it had imported the machine, but no action was ever taken against the Juarez clinic.

In the years since, one worker at the junkyard has died from a rare bone cancer. Others have suffered sterility, skin discoloration, and other disorders. Hundreds of Juarez residents have been tested for radiation poisoning, and at least a dozen have shown chromosome damage.

The hapless Sotelo--who, remarkably, seems to have escaped serious contamination--was arrested in 1990 on theft charges. In the prison where he still awaits sentencing, the guards call him El Cobalto--the Cobalt Man.

Meanwhile, a decade and a half later, the story of the worst radiation disaster in North American history continues to underscore the potential that increased trade and growing cross-border links pose for public health risks, environmental damage--and personal tragedy.

ENDNOTES

1 Susan West, "Hot," *Science* (December 1984); Paul Salopek, "Global Trade in Used Technology Imperils the Unwary," *El Paso Times* (July 28, 1991); Katherine Silberger, "[exclamdown]Desastre!" *Village Voice* (June 16, 1992).

2 A rad is a unit of absorbed radiation. One to 50 rads per hour is considered a highly dangerous dose. By comparison, a bystander at Three Mile Island would have received a dose of only about 100 millirads, or one-tenth of a rad.

 Back to
Bordering the Future