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Things are looking brighter at former GE facility turned Superfund site—Army Corps of Engineers assists EPA in New Jersey Superfund cleanup

In 1996, a Hoboken, New Jersey, resident noticed droplets of an odd substance dripping from the ceiling onto their apartment's kitchen counter top. During an investigation, state health officials discovered mercury underneath the five-story apartment building's wooden floorboards and absorbed in the walls. Mercury is a silvery-white metallic element that is poisonous to humans and is the only metal that exists as a liquid at room temperature. The investigators also detected mercury vapor in the air, which can be toxic when inhaled. Further tests revealed that several children living in the building had unacceptable levels of mercury in their bloodstream. The 27,000-square-foot apartment building and attached four-story brick townhouse, which were located near a high school in a primarily residential community, were quickly closed because they posed a threat to public health. Approximately 40,000 residents live within a one-mile radius of the building.

From 1910 to 1965, the building housed a General Electric (GE) plant that produced mercury vapor lamps and mercury connector switches. Mercury vapor lamps, often used as street lamps, were popular in the early part of the 20th century. The mercury vapor was enclosed in a glass bulb and gave off a particularly cold, harsh, blue-green colored light.

In the early to mid-1990s, the building was converted into 16 residential apartments and artists studios. After the mercury was discovered, the United States Environmental Protection Agency (EPA) investigated the building and decided that it needed to be cleaned up. EPA sampled the soil to determine the extent of the contamination. The cleanup method that was selected involved removing and disposing of the contaminated soil and other materials off site and demolishing the building.

GE was required under administrative order to pay for the cleanup. An administrative order is a legal document signed by EPA directing an individual, business, or other entity to take corrective action or refrain from an activity. EPA asked the New York District of the U.S. Army Corps of Engineers (the Corps) to supervise the cleanup, which was designed by GE's contractor, Blaslund, Bouck, and Lee, Inc. (BBL) and carried out by BBL's contractor, Sabre Demolition, Inc.

The Corps also assisted EPA in evacuating and relocating the 16 families and 20 businesses that occupied the area. The federal government bought their properties and they all were eventually provided permanent residence.

"Remediation of the building involved disassembling it by hand and demolishing brick walls using jack hammers," noted Neil Ravensbergen, the Corps Project Engineer. According to Ravensbergen, the clean up process was thorough. "The building's windows were removed and the brick surfaces beneath them inspected for mercury contamination. The floor was removed one bay at a time and inspected

for mercury. The concrete slab and subsurface piping were removed, and mercury contamination was removed from the surrounding soil," said Ravensbergen.

During cleanup, measures were taken to protect the surrounding neighborhood from mercury contamination. A filtration system was installed to remove mercury vapor from the air. The building was enclosed by scaffolding and shrink wrap to prevent contaminated dust from leaving the site. Nearby sidewalks were closed, and a perimeter fence and concrete barriers were installed around the site. The Corps monitored the air for mercury, dust, and noise pollution throughout the workday and established a treatment plant to process water that had come in contact with mercury-contaminated materials.

The non-hazardous solid waste and asbestos-containing material that were removed during cleanup were sent to specially designed waste management facilities in New Jersey and Pennsylvania, while debris that was contaminated with mercury was shipped to hazardous-waste landfills in New York and Alabama. Liquid mercury was recycled.

The Corps is pleased with the project's success in eliminating a real threat to human health, particularly the well-being of children. "The residents are happy, we have made significant progress on the remediation of the site, and restoration is imminent," said Ravensbergen. Their work is not finished, however. "We are continuing to sample and remediate the soil at the site and in neighboring yards. The project is estimated to be completed by Spring 2004," said Ravensbergen.

The Corps attributes the project's success to the teamwork among the various agencies involved in the investigation and cleanup. "As a team, we developed an understanding of each other's concerns and needs and worked together with EPA and GE to resolve issues, manage the work, and provide a safe work environment," Ravensbergen said.

EPA agrees. "I think our working relationship has been excellent. The Corps' staff, when reporting problems to me, always suggest technically feasible and sound solutions," said Jon Gorin, Remedial Project Manager in EPA's Region 2 office. He added, "Also, over the years, I've found that the engineers from the Corps have a good sense of when an issue is important, and when it is something relatively minor. I've not always found that to be the case when working with oversight staff from private firms."

"I have worked at several Superfund sites, and this has been a real success in terms of removing a serious health hazard to the public," said Ravensbergen. "Not only was this building not structurally sound, but the mercury contamination was overwhelming and truly a health hazard to anyone on or around it." He added, "It's a shame to lose a piece of history, but it was a benefit to the overall environment."

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