

The Bloomington PCB Cleanup Project

**Answers
to
Your
Questions**

Answers to Your Questions About the Bloomington PCB Cleanup Project

Westinghouse Electric Corporation's waste technology services division is performing the cleanup of several PCB-contaminated disposal sites in the Bloomington, Indiana, area under a court-approved agreement. The Corporation has developed a scientifically-designed cleanup plan that deals responsibly with this environmental challenge.

This booklet provides answers to the most frequently asked questions about the PCB cleanup project. Additional information is available by contacting the city of Bloomington's PCB Coordinator, the Monroe County Health Department's PCB Coordinator, the Indiana Department of Environmental Management and the U.S. Environmental Protection Agency. Or contact the Westinghouse project office in the One City Centre Building at 7th St. and College Ave., in Bloomington. Telephone (812) 334-0030.

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Questions and Answers

PCBs

What are PCBs?

The letters stand for "Polychlorinated biphenyls"—a family of more than 200 chemical compounds. They range from light, oily fluids to heavy oils, greases and waxes. Because they are chemically and thermally stable and fire-resistant, these compounds found wide use in industry beginning in the 1930s in such common products as plastics, adhesives, paints and varnishes. They made a good heat transfer fluid and they were used in the inks and dyes in newsprint.

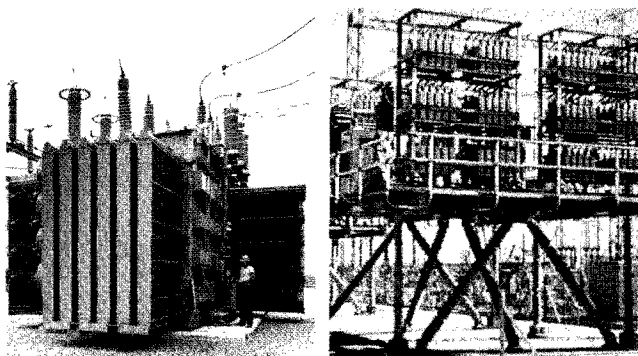
Another use of PCBs was by the electrical industry where they provided greater safety and efficiency in such electrical products as transformers and capacitors. They not only reduced the risk of fires in office buildings, schools, hospital and factories where such electrical products are used, but they had excellent electrical insulation qualities, which increased efficiency.

However, after about 40 years of industrial use, research revealed a build-up of PCBs in the environment due to their slow rate of decomposition. Accumulations were found in the fatty tissues of fish and wildlife. That's when the government and industry became concerned about long-term environmental effects.

In 1976, Congress passed the Toxic Substances Control Act that provided for the regulation of the manufacture, distribution, usage and disposal of chemical substances, including PCBs.

What created the Bloomington PCB situation we are in today?

Westinghouse manufactured electrical capacitors containing PCBs at its distribution apparatus division in Bloomington from late 1957 until 1977. As part of the manufacturing process it was necessary to dispose of scrap units. The accepted industry practice at that time was to use local municipal landfills where garbage and trash also were discarded. The company has ceased using PCBs in its capacitor products.

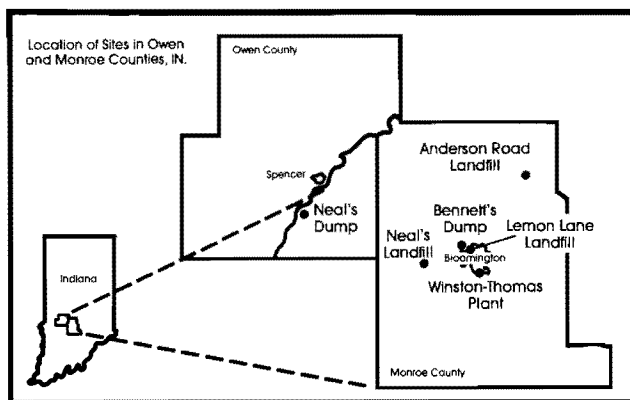


PCBs were used by the electric utility industry in such electrical products as transformers and capacitors of the type shown here.

THE CONSENT DECREE

What is being done to resolve the situation?

The solution is spelled out in a consent decree agreed to by Westinghouse, the U.S. Environmental Protection Agency, the state of Indiana, Monroe County and the city of Bloomington. It was approved by the United States District Court for the Southern District of Indiana on August 22, 1985. The consent decree outlines a cleanup program involving the excavation and incineration of an estimated 650,000 cubic yards of dirt and other materials containing PCBs at six disposal sites and several streams in the Bloomington area.



Drawing shows the location of the six PCB disposal sites to be cleaned up by Westinghouse in accordance with the consent decree signed by the city of Bloomington, Monroe County, the state of Indiana, the Environmental Protection Agency and Westinghouse.

The first phase will involve interim remedial and maintenance activities to contain the various sites until the more extensive excavation and incineration of PCB materials can start. An interim storage facility will be constructed at the former Winston-Thomas sewage treatment site to accommodate 6,200 cubic yards of material from the Monroe County landfill on Anderson Road, 3,600 cubic yards of stream sediment, and capacitors from the Lemon Lane landfill. The total volume is estimated to be about 10,200 cubic yards.

The second phase of the project will focus on the construction and operation of a high-temperature incinerator which initially will provide a modern sys-

tem for the disposal of Bloomington's and Monroe County's trash and garbage. The incinerator facility will later be licensed to enable the processing of PCB material contained in the six area landfills. The last phase will be the actual excavation and incineration of the PCB materials from the six disposal sites, a process that is expected to take between 11 and 15 years to complete, after all permits are received.

What provisions are in the consent decree for monitoring Westinghouse's performance during the cleanup?

As called for by the consent decree, Westinghouse's cleanup plans will be subject to review and approval by the city of Bloomington, the state of Indiana and the U.S. Environmental Protection Agency.

Under state and federal law, the performance of the incinerator will be monitored during system checkout and actual operation. In addition, the consent decree provides for monitoring by an independent testing organization chosen by the city of Bloomington and paid for by Westinghouse.

Westinghouse may also be required by the City to perform continuous monitoring of the operating condition of the incinerator. Plus, the consent decree stipulates that the City may require devices external to the incinerator for the continuous display of operating conditions determined by the City to be related to health and safety.

Will the community have a say in the cleanup project?

There will be ample opportunity for public comment during the permit review process. It is expected that the City, County and State will sponsor public meetings to discuss the technical details of the various Westinghouse proposals as they are developed. Copies of all state and local government permit applications will also be available for public inspection.

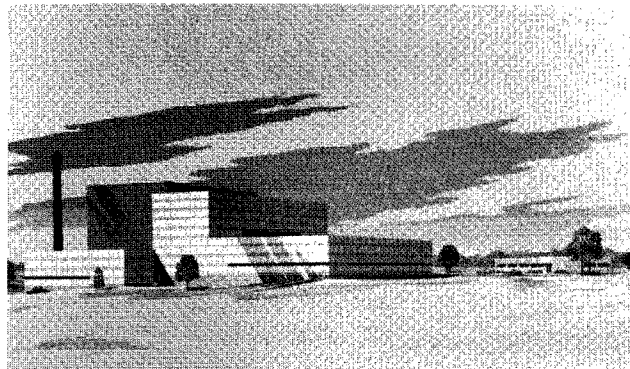
Westinghouse has already participated in several public forums and small group meetings with local community leaders to discuss aspects of the PCB cleanup project and we expect to continue this dialogue throughout the course of the project.

Our aim is to provide local residents with the information they want.

Is the Dillman Road site an acceptable location for the incinerator?

The parties to the consent decree agreed to the selection of the Dillman Road site. We are convinced it meets the requirements for an incinerator site. The property is situated in a sparsely populated area that is properly zoned for such an incinerator facility. There is convenient access to the facility from State Highway 37.

The location is adjacent to the city-owned sewage treatment center, and will enable the incinerator to process the city's sewage sludge generated during the course of the PCB cleanup project, thus eliminating the need for new sludge landfills.



An artist's rendering of the proposed incinerator facility.

As a waste-to-energy plant, the Bloomington incinerator facility will be capable of generating either steam for process use or electricity. It is hoped this incinerator facility will become the cornerstone of an adjacent industrial park designed to bring new industries and job opportunities to the Bloomington area. Potential industrial steam users should be especially interested in tapping the energy which will be generated by incineration.

What plans do you have for cleaning up other Bloomington area sites suspected to be contaminated with PCBs?

The six sites identified in the consent decree

represent the major sources of PCB contamination in the Bloomington area. However, other sites may be included in the cleanup plan, subject to the agreement of all parties to the consent decree.

Monroe County officials have organized a task force to identify other such potential PCB sites in the Greater Bloomington area. The committee is expected to make its findings known to the U.S. Environmental Protection Agency.

What will become of the disposal sites after the PCB materials have been removed and incinerated?

Under the consent decree, Westinghouse will be responsible for grading each of the excavated sites. A soil cover will be installed and vegetation planted to provide erosion control. A drainage and sediment control program will be implemented to control surface water run-off and minimize sediment run-off.

As an additional measure of protection, clay caps of varying thicknesses will be required at the Lemon Lane site and portions of the Winston-Thomas and Neal's Landfill sites.

After the sites have been closed, Westinghouse will continue to be responsible for groundwater monitoring, and the maintenance of the protective ground covers and other measures designed to prevent erosion. Annual reports on the status of the sites will be filed by Westinghouse with the EPA, City and State until such time as the consent decree is terminated.

THE TECHNOLOGY

Why was incineration chosen as the method for eliminating the PCBs from the six Bloomington area disposal sites?

Incineration is one EPA approved means of PCB disposal which is particularly suited for the destruction of PCBs in the types and quantities of material to be handled in Bloomington.

Shouldn't these toxic materials be stored in a secure facility until a better technology for PCB destruction comes along?

EPA regulations do not allow for the long-term storage of PCB materials. Besides, storing the material for an indeterminate time or moving it to another location doesn't resolve the situation. The only way to deal with the situation is to destroy the material, and that's what the incinerator will do.

The technology is available now for safely and effectively destroying the PCBs contained in the six Bloomington disposal sites, eliminating once and for all what has been a major community environmental concern. Waiting for a better technology to come along will only delay the opportunity to clean up and permanently stabilize these six disposal sites.

Does the O'Connor Combustor represent the best available technology for the incineration of the PCB wastes?

There are several incineration technologies quali-

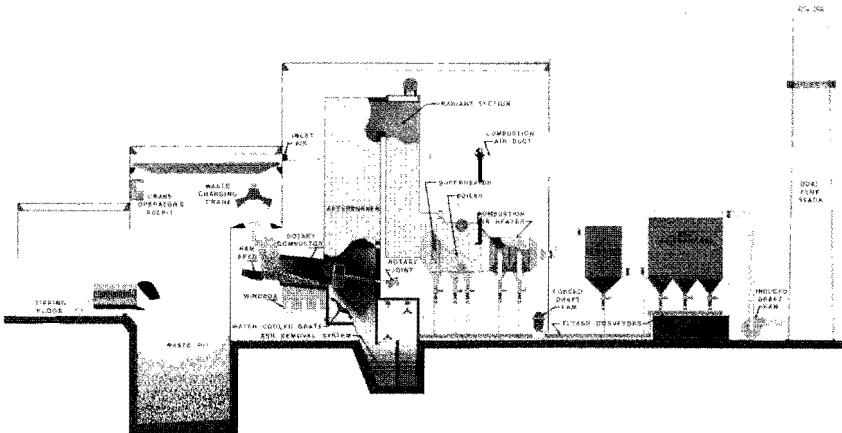
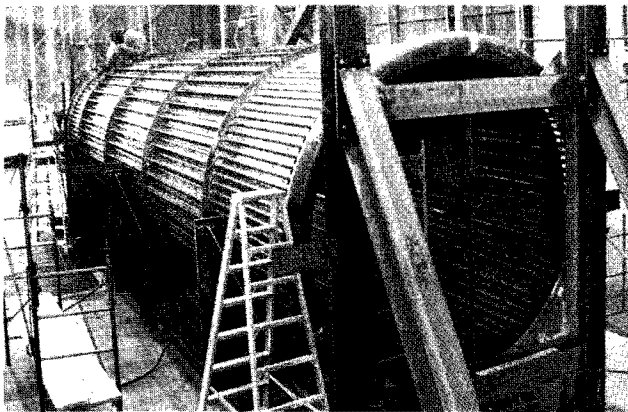


Illustration shows how the Westinghouse waste-to-energy facility will process garbage and landfill materials containing PCBs.

fied by the EPA for the safe, effective destruction of PCBs. However, we believe the O'Connor combustor system has several distinct advantages over other systems that make it more attractive for use in the Bloomington PCB cleanup.

Unlike conventional air-cooled incinerators, the O'Connor technology features a water-cooled, rotary combustor designed to provide for improved temperature control and a better mix of wastes and air. This unique design allows the system to burn with higher thermal efficiency than other systems.

There is a thorough burnout of combustible waste in the O'Connor system. And by using pre-



A welder at the O'Connor Combustor Corporation is dwarfed by this huge combustor being built for a waste-to-energy facility in New York. Two similar, but smaller, combustors are planned for the Bloomington incinerator facility.

heated combustion air, the systems can accommodate a wide variety of wastes, including materials with a high moisture content, such as sewage sludge and residual oil. In contrast, conventional air-cooled systems require supplemental firing with fossil fuels.

With the O'Connor system, there is less downtime for maintenance and repairs. This is achieved in two ways. First, using water cooling to control cylinder wall temperatures greatly reduces the destructive effects of hot acid gases on system components.

Second, the rotary design of the combustor eliminates refractory and multiple moving grates, which are primary areas of wear and burnout in traditional waste-to-energy systems.

How will the waste-to-energy system work?

City and county trucks will deposit garbage and trash into an indoor waste pit. Garbage and trash will be picked up from the pit and deposited by overhead crane into a feed chute. Hydraulic rams will push the refuse into the large, slowly-rotating cylindrical furnace which is the O'Connor combustor. The combustor is installed at a slight angle. As the cylinder rotates, pre-heated air will be forced into the cylinder through and over the waste. This will dry the waste and support the combustion. The waste will tumble as it burns, moving toward the lower end of the combustor chamber. The continuous air injection and tumbling will ensure effective combustion of the waste which is a necessary factor for good quality air emissions.

Any non-combustible residue will fall into the ash removal system to be hauled away by truck to a designated landfill. Combustion gas will pass through air pollution control equipment at the end of the process before being discharged to the chimney.

To produce usable energy, the hot gas from the burning waste will be captured as it leaves the combustor and funneled into a water tube-type boiler. The hot gas will never come in contact with the water but will produce superheated steam. That steam can either be used by nearby industry or it can drive a turbine-generator to make electricity.

How will the incinerator operation differ when the processing of PCB materials begins?

The chief difference is that an afterburner system will be activated during the incineration of PCB materials. In the afterburner chamber, auxiliary burners will bring the hot combustion gas temperatures to above 2,000 degrees Fahrenheit. Evidence indicates that to destroy PCBs in the combustion gas, they must be heated at temperatures above 1,500 degrees Fahrenheit for more than one second. The afterburner will assure this. In fact, in our design, the PCBs will be heated above 2,000 degrees Fahrenheit for more than two seconds.

What will be the ratio of trash and garbage to landfill materials in the incinerator?

We anticipate a mixture of about 60 percent municipal solid waste and 40 percent landfill materials. A more precise estimate, based on further analysis, will be developed for incorporation into our hazardous waste permit applications.

The incinerator facility will feature independent waste storage areas for the garbage and the PCB contaminated materials. And the two materials will continue to be segregated right up until placement in the combustors for processing.

ENVIRONMENTAL CONCERNS

What pollution control safeguards will be incorporated into the facility?

Air pollution will be kept to a minimum through a combination of proper operation of the combustor and air pollution control systems. The combustor will be operated in a manner to minimize the production of potential pollutants while maintaining complete combustion of both the municipal solid wastes and PCB materials.

Once the combustion gases leave the combustor and pass through the boiler section where heat is extracted, they will enter a dry scrubber. This device is designed to remove acid gases such as hydrogen chloride and sulphur dioxide by treating the gases with a lime and water mixture to neutralize the acids in the gas stream. Once the gases are neutralized, the gases will pass from the dry scrubber into a baghouse where the fly ash and other particulate matter in the gas stream will be removed.

By this combination of thorough combustion and highly efficient operation of the acid gas scrubber and baghouse, air pollution emissions will be minimized to meet all applicable regulatory standards.

Will the emissions from the plant be hazardous to public health?

No. The Bloomington incinerator will meet all emission requirements established by the Federal Government and by the state of Indiana. The regulatory agencies set emission limitations based upon the effects of the pollutants on both the environment and on human health. It is the responsibility of the regulatory agencies to determine what air quality standards are required to protect human health and the environment. It's our job to make certain we meet those emission levels.

Westinghouse is performing a risk assessment, with the cooperation of the city and state, which will focus on the design specifications and operating conditions of the incinerator.

What will happen in the event of a malfunction of the combustor or pollution control equipment?

The combustors planned for the Bloomington project are highly reliable waste-to-energy systems that have been operating at several resource recovery plants worldwide for well over a decade. In the unlikely event that a malfunction of the incinerator occurs, a combination of automatic control systems and operator action will be used to detect and to correct the situation. Any equipment malfunction will be quickly corrected or the plant will be shut down.

Such rare or unusual events will be included in the risk assessment being performed by Westinghouse. This risk analysis will be reviewed by the City, County, State, and EPA.

What will be done with the ash that is generated?

The ash from the incineration process will be disposed of in a landfill in accordance with all regulatory requirements of the state of Indiana and the EPA. The ash will be tested to assure that it meets the requirements of those permit conditions.

INTERIM STORAGE PROVISIONS

What will the interim storage plan involve?

Under the court-approved agreement, Westinghouse will remove exposed capacitors from the Lemon Lane and Bennett's Dump sites, along with an estimated 6,200 cubic yards of soil containing PCBs from the Monroe County landfill on Anderson Road. The materials will be stored—along with about 3,600 cubic yards of sediment from several area streams—at the city's Winston-Thomas sewage treatment plant property until completion of the high-temperature incinerator at Dillman Road.

Once the PCB portion of the incinerator



Exposed capacitors at the Lemon Lane landfill will be removed as part of the interim remedial actions planned at several of the disposal sites.

becomes operational, the PCB materials stored at Winston-Thomas will be removed and the interim storage facility will no longer be used for PCB material storage. The PCB materials to be stored at Winston-Thomas represent less than two percent of the total volume of landfill materials that will ultimately be excavated and incinerated.

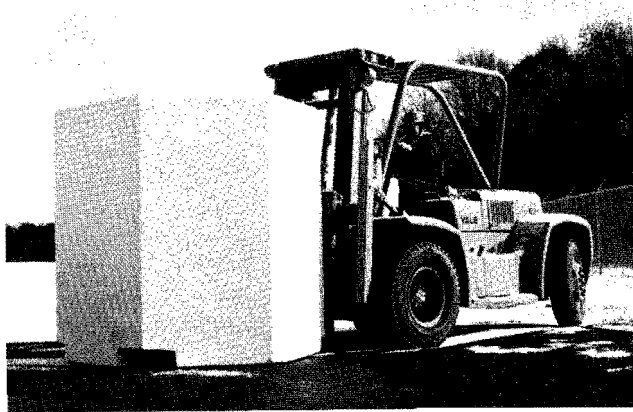
What provisions have been made to prevent leaks of PCB materials while in storage at Winston-Thomas?

The bulk soils and stream sediment will be housed in a rigid frame, steel building, capable of storing up to 13,000 cubic yards of material. The floor of the building will consist of eight inches of reinforced concrete with a concrete curb three feet high around the outside. A thick plastic liner will

underlie the entire floor and curbing of the building as an additional measure of protection against leakage. This high density polyethylene material will be resistant to water and PCBs and other chemicals which may be present in the contaminated soils or sediments.

Any residual water from the soils or sediments will drain to sump pumps which will discharge to a holding tank. The contents of the holding tank will be sampled and treated—if necessary—prior to discharge into the city of Bloomington's sewage system.

Capacitors and capacitor parts, because of their higher level of PCB contamination, will be stored in reinforced concrete modules called SUREPAKs. Developed by Westinghouse for the interim and long-term storage of low-level radioactive wastes, each seven-foot-tall SUREPAK can hold about 200 cubic feet of material. An estimated 68 SUREPAK modules will be required to accommodate the storage of capacitors and capacitor parts. The SUREPAKs will be situated together on an elevated, compacted soil pad.



These reinforced concrete SUREPAK modules will be used for the interim storage of capacitors and capacitor parts gathered during the interim site cleanup phase.

What provisions are being made to protect residents in the vicinity of the disposal sites from releases of toxic substances during the excavation of the landfill materials?

During the interim remedial cleanup phase, the only excavation required will be at the Monroe County landfill on Anderson Road. This site is

remote from residents and the material to be excavated is not volatile. At Lemon Lane, little or no excavation will be done.

The residents in the vicinity of our activities will be protected by the measures that are taken to control the sites. Security fencing around the sites has been designed to prevent any public access.

Airborne dust and vapors at the work areas will be monitored for two purposes: one, to determine if and to what level respirator protection for the workers is required, and two, to determine if action is required to prevent airborne releases outside of the work area.

Such actions may include temporarily stopping work, covering areas of escaping vapors with soil or other material to control the release, water spraying to control dust, or other control measures. Surface water run-on and run-off will be controlled to prevent the significant release of contamination through site drainage.

What provisions have been made for dealing with potential PCB spills and truck accidents during the transport of the contaminated landfill materials to the interim storage facility?

The contaminated soils and stream sediments will be hauled in water-tight, covered containers which can be lifted on and off a special truck chassis by hydraulic lift. While the soils will be moist, they will contain little free water which might drain from the soil and essentially no PCB liquids. Capacitors containing free liquid will be placed in sealed drums with the lids bolted on. The drums will be hauled in the same lift-off container truck as the soil and sediments.

The potential for spills is remote due to this multiple containerization. The potential for trucks being involved in an accident will be minimized by avoiding congested areas to the maximum extent possible and by limiting the truck speed.

In the unlikely event of a spill due to a truck accident, Westinghouse will establish procedures to immediately begin the cleanup of spilled materials. All trucks will be radio-equipped for quick reporting of accidents. The majority of the contaminated materials are solids, not liquids. Therefore, containing and controlling a spill will not be difficult.

Miscellaneous Questions

Will Westinghouse make money on this project?

No. The corporation's investment will be large and considerably in excess of any income that will result from garbage tipping fees and the sale of steam or electricity.

Won't the incinerator cause a decrease in real estate values in the Dillman Road area?

We don't believe it will.

A recent study of six major waste-to-energy currently operating in the U.S. showed no adverse impacts on the real estate values of property nearest the plants, compared to more distant commercial or residential areas.

In most cases, the areas surrounding resource recovery facilities have experienced very rapid appreciation, noted Konheim & Ketcham, the New York environmental consulting firm which conducted the survey.

Here in the Dillman Road area, property values could likely go up if we are successful in attracting new business and industry to the industrial park that is being planned on the adjacent property owned by Westinghouse. It is our hope that the steam to be produced by the incinerator will attract companies that require steam for industrial process use. And, of course, with new business comes additional job opportunities for area residents.

In addition, the incinerator facility and surrounding grounds will be attractive, clean, quiet, odor-free and dust-free since all operations will be carried out indoors in a carefully controlled manner.



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