THE CITY OF NEW YORK

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

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Testimony
Of

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Regarding

PCBs in School

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Good afternoon Chairpersons Jackson, Gennaro, Gioia and members of the Committees on Education, Environmental Protection and Oversight & Investigations. I am Jessica Leighton, Deputy Commissioner for Environmental Health at the Department of Health and Mental Hygiene (DOHMH). I am an epidemiologist and have been with the Health Department for more than 19 years. I want to thank you for the opportunity to comment on the recent attention given to the presence of polychlorinated biphenyls (PCBs) in building materials identified in certain New York City schools.

We are all concerned about potential exposures and health risks from contaminants in our environment. Part of the Health Department's responsibility in promoting and protecting health is to effectively communicate with the public regarding health risks that may exist in the environment. I hope that my testimony today will help you to better understand the issue of PCBs in the environment.

I will begin with an overview of PCBs and their uses, the presence of PCBs in the environment and the health effects associated with exposure to PCBs, and then discuss what we know about exposure and health risks associated with PCBs found in window caulk. My colleagues from the Department of Education will address specifics pertaining to the testing, policies and protocols in the schools.

PCB Overview

PCBs are manmade chemicals that were widely produced and distributed across the country from the 1950's to 1977 until the production of PCBs was banned by the US EPA law which became effective in 1978. PCBs are a class of chemicals made up of more than 200 different compounds. PCBs are non-flammable, stable, and good insulators so they were widely used in a variety of products including: electrical transformers and capacitors, cable and wire coverings, sealants and caulking, and household products such as television sets and fluorescent light fixtures. Because of their chemical properties, PCBs are not very soluble in water and they do not break down easily in the environment. PCBs also do not readily evaporate into air but tend to remain as solids or thick liquids. Even though PCBs have not been produced or used in the country for more than 30 years, they are still present in the environment – in the air, soil, and water and in our food.

What we know about exposures and health effects

PCBs are likely to be found in the caulking and other building materials of a large proportion of homes, schools, hospitals and office buildings built or renovated before 1978. In NYC, more than 225,000 residential, commercial, industrial and institutional buildings were constructed between 1940 and 1980 and potentially contain PCBs in caulk or other building materials. So it's not surprising that PCBs were identified in the caulk in some NYC schools built before 1978.

PCBs have been widely studied in the environment, in the workplace, and in laboratory animals. People can be exposed to PCBs by touching PCBs, breathing in contaminated

air, or eating contaminated food. The most serious exposures and health risks are among workers who were exposed during PCB manufacturing and during cleanups of PCB spills and fires. Some communities have also been exposed to PCBs from large scale environmental releases. The general public is mostly exposed to PCBs in the food we eat – especially fish, meat and dairy products. While PCBs are widespread in the environment, potential exposures from building caulking or other building materials are considered to be very small when compared to everyday dietary exposures.

We must keep in mind, however, that there are gaps in our knowledge. For example, although we know that PCBs are persistent in our industrialized environment from past use, we do not have information on the levels of PCBs in our current environment. Thus, baseline or background levels are not available to help us assess what may be above this background when we test schools or other buildings. It's important to remember, however, just because PCBs are found it does not mean we are in danger.

Most of us probably have some PCBs in our bodies, but few of us suffer any health consequences as a result. However, high levels of exposure to PCBs can be dangerous. Skin conditions, such as acne and rashes, can occur after exposure to large amounts of PCBs in the workplace. PCBs cause some types of cancer in laboratory animals and high levels of exposure may cause cancer in people. In addition, studies of pregnant women and their children suggest a link between high levels of PCBs in a mother's body during pregnancy and some effect on her child's birth weight, short-term memory and learning. Our knowledge about these health effects come from studies of laboratory animals, occupational studies of exposed workers, and dietary studies of people who have consumed large quantities of PCB-contaminated fish. There is a growing body of research showing that human exposures to PCBs from building materials are quite small and studies have not found health effects from such exposures.

Since the EPA ban, PCB levels in humans have greatly decreased. The National Health and Nutrition Examination Survey measured PCB levels in human blood and found that levels are low in children and increase with age. This is because PCBs are persistent in the body and exposures were higher in years past. While laboratory tests can measure PCB levels in blood, fat tissue and breast milk, these tests are not commonly available and cannot determine where, when or for how long a person was exposed to PCBs. Nor can these tests pinpoint an acute or recent exposure or tell whether the person will develop adverse health effects.

PCBs in Window Caulk

PCBs were used in some caulking and other building materials, particularly from 1950 to 1977. When contaminated caulk is disturbed, or deteriorates with age, it produces dust that may contain PCBs. This dust can be inhaled or ingested through normal hand-to-mouth contact, particularly by young children. The concentrations found in indoor dust and air can vary depending on the type of caulking and the conditions in the room, but they are unlikely to reach levels that would pose health risks. No scientific studies have linked exposures from building caulk with health effects in building occupants.

When PCB-containing caulk is removed and disposed of, it can contaminate surrounding surfaces. Necessary repairs that disturb caulk, such as window removal and replacement, should be conducted by trained workers who use safe work practices to minimize dust and contain contaminated waste. Once the window replacements have been completed, the area should be thoroughly cleaned using recommended methods. Protocols, such as those published by the New York State Education Department, offer guidance on testing of caulk and soil, and provide abatement methods based on lead-based paint hazard controls.

There have been a few detectable levels of PCBs found in the schools. There are also detectable levels of PCBs found in our food. We can do comparisons of these levels. For example, if children were to absorb the trace amounts of the PCBs found in the lunchroom air at one school to the amount they get in food, they would have to sit in the lunchroom for a month to get the amount of PCBs from eating one hamburger.

Environmental Testing for PCBs

Environmental sampling is a complex undertaking that requires careful planning and interpretation. Interpreting PCB levels from environmental testing is complicated by the multiple chemicals involved, the lack of background levels in the environment and the lack of regulatory exposure limits. Several different types of tests are available to determine PCB levels in the environment. Bulk sampling of materials, such as caulk, can provide information on the presence of PCBs in tested materials but does not provide information on the potential for human exposure. Sampling of the air, surfaces, and soil are methods that can help determine potential human exposure through inhalation, ingestion and skin contact. Thus, the School Construction Authority collected air, surface dust and soil samples in several schools. Although there are no regulatory or recommended daily PCB exposure limits for the general population, the results of the air samples taken by the SCA were all within published Federal and State guidelines that have been used to determine reoccupancy after PCB cleanups. In fact, the Department of Education's protocols for dealing with PCBs far surpasses the state guidelines. Surface dust wipe samples can indicate potential ingestion and dermal exposures. Results of these samples, with few exceptions, were all within the EPA decontamination standard for residential and commercial use. Soil samples for PCBs indicated some elevated levels in some areas adjacent to school buildings. These areas have been isolated until further evaluation and remediation.

In closing, we do not believe there is a significant health risk associated with the presence of PCBs in window caulk as long as it remains intact. However, to ensure that children and staff are protected from potential exposures, we will continue to work with city, state, and federal partners, as well as with the school community and elected officials to minimize any risks.

Thank you again for the opportunity to testify.

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