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## Polychlorinated Biphenyls (PCBs) In Aniak - Health Risk Assessment

In 1978 the U.S. Air Force abandoned its Aniak White Alice Communications site. The Kuspuk School District expanded and converted the buildings into a vocational education center. In July 1983, 300-350 gallons of PCBs were discovered on site, raising numerous concerns about potential health risks to workers, residents, and school children. Numerous areas of soil contamination also were discovered, some reaching a depth of 4-5 feet and containing PCBs at levels between 460-28,000 parts per million. Extensive environmental sampling and cleanup began in a joint operation of the U.S. Air Force and the Alaska Department of Environmental Conservation. Epidemiologic investigation was initiated to assess health risks to Aniak residents.

During the epidemiologic investigation in September 1983, we inspected the White Alice site; and interviewed, examined, and obtained blood specimens from several workmen who were involved in gutting the communications building in 1979-1980. Four of these individuals worked 8-10 hours-per-day, six days-a-week for approximately one month. In order to lighten the power transformers, workers attempted to drain the transformer oil that consisted of PCBs. Plugs were removed and the oil was siphoned by mouth. Because the material was very thick and difficult to siphon, at least one transformer was tipped over; insulating fluid drained onto the floor. During these activities, a major spill of antifreeze occurred when workers cut through interior pipes. Antifreeze spread across the floor of the building, reaching a depth of 3-4 inches, and covering the fluid which had leaked from the power transformers. No special work clothes were worn. Clothing became impregnated with antifreeze by the end of the work day. Employees returned home each night wearing their work clothes, boots, and gloves which were laundered by family members. Employees ate lunch at the site; hand washing facilities were not available. Employees reported that they were unaware that oils, anti-freeze, or other materials at the site might be hazardous.

Blood samples obtained on employees were analyzed for the presence of PCBs by the Centers For Disease Control, Atlanta, Georgia. Results from all seven individuals tested indicated PCBs quantitated against Arochlor (AR) 1260 standards ranged from 3-12 parts per billion. All results are lower than the upper limit of expected values for PCBs (20 parts per billion) in human serum.

Significant environmental contamination with PCBs was documented at multiple sites in and near the White Alice communications building in Aniak. In a cooperative effort, the U.S. Air Force and Alaska Department of Environmental Conservation conducted a methodical environmental sampling and clean up program. While major amounts of contaminated PCBs have been removed, several areas that remain contaminated are scheduled for final clean up in the spring and summer of 1984.

Based on documented environmental samples and detailed occupational histories, local workmen involved in gutting the White Alice site in 1979-1980 were exposed to PCBs.

Blood specimens obtained in September 1983, from several workmen who were among the most heavily exposed individuals showed levels of PCBs within the expected range for the population. There is no evidence based on these samples that exposure to PCBs resulted in absorption of PCBs or elevated body burdens among these seven individuals. Medical histories obtained from each of the individuals failed to elicit acute medical problems or chronic medical problems which could be related to or associated with exposure to PCBs or other chemicals as a result of activities at the White Alice site. Based on results of the epidemiologic investigation, individuals can be reassured that no future serious medical problems are likely to result from their activities at the White Alice site.

The high level of environmental PCB contamination and vast amount of discarded chemical and solid waste material provide potential serious health and safety problems at the Aniak White Alice site. The tremendous amount of discarded chemical and metal debris strewn over several acres of land provides a safety hazard to children and students. The physical dangers from the dump are far greater than any human health risks from PCBs.