

MINUTES OF THE SENATE UTILITIES COMMITTEE

The meeting was called to order by Chairman Stan Clark at 9:30 a.m. on January 22, 2004 in Room 526-S of the Capitol.

All members were present.

Committee staff present:

Bruce Kinzie, Revisor of Statutes
Raney Gilliland, Legislative Research
Emalene Correll, Legislative Research
Ann McMorris, Secretary

Conferees appearing before the committee:

Jo Ann Heiman, Chief of the Chemical Risk Information Branch; Air, RCRA and Toxics
Division, Environmental Protection Agency
William Eastman, Westar
Michael V. Engel, Midwest Energy, Inc., Hays
Colin Hansen, Kansas Municipal Utilities, McPherson
Joe Dick, Regulatory Specialist, Kansas City Ks. Board of Public Utilities
Terry Eaton, Kansas City Power & Light, KC
Gene Russell, Aquila
Whitney Damron, Empire District Electric Company
Dave Holthaus, Kansas Electric Cooperatives, Inc. (KEC)

Others attending: See Attached List.

Introduction of Bills

Moved by Senator Wagle, seconded by Senator Emler, introduction of a bill to amend KSA 58-2221-an Act concerning wind resources and technologies; relating to the recording of leases or easements related thereto. Motion carried. (Attachment 1)

PCBs Information

Jo Ann Heiman of Environmental Protection Agency reviewed the background on the EPA authority to regulate PCBs and other chemicals, and provided a description of PCBs and the waste disposal requirements. (Attachment 2)

The following conferees were given questions to address regarding PCBs . The questions were: (1) the extent which PCB transformers can be identified and their location; (2) the number of known transformers/voltage regulators in the Kansas distribution system which contain PCBs; (3) problems identified with the disposal of transformers containing PCBs; and (4) Actions to replace transformers containing PCBs over the past ten years, the net results of those actions, and plans for the future regarding transformers containing PCBs.

William Eastman, Westar (Attachment 3)
Michael V. Engel, Midwest Energy, Inc., Hays (Attachment 4)
Colin Hansen, Kansas Municipal Utilities, McPherson (Attachment 5)
Joe Dick, Regulatory Specialist, Kansas City Ks. Board of Public Utilities (Attachment 6)
Terry Eaton, Kansas City Power & Light, KC (Attachment 7)
Gene Russell, Aquila (Attachment 8)
Whitney Damron, Empire District Electric Company (Attachment 9)
Dave Holthaus, Kansas Electric Cooperatives, Inc. (Attachment 10)

The next meeting of the Senate Utilities Committee will be held on Monday, January 26.

Adjournment.

Respectfully submitted,
Ann McMorris, Secretary

Attachments - 10

SENATE UTILITIES COMMITTEE GUEST LIST

DATE: January 22, 2004

Name	Representing
Dave Holtkus	KEC
MARK SCHREIBER	Westar Energy
Bill Eastman	" "
JOE DICK	KCBPU
Colin Hansen	KMU
SCOTT SCHNEIDOR	GRBA
TERRY EATON	KCPG
Gene Russell	AQUILA, INC.
JOHN C. BOTTENBERG	Westar
Whitney Damon	Empire
MIKE ENGEL	MIDWEST ENERGY
LARRY BERG	MIDWEST ENERGY
J.C. Long	AQUILA, INC.
Gary Blackburn	KDHE
JAN LAMBERT	EPA
MARZIE TALLEY	U.S. EPA
JOANN HELMAN	U.S. EPA

By

AN ACT concerning wind resources and technologies; relating to the recording of leases or easements related thereto; amending K.S.A. 58-2221 and repealing the existing section.

Be it enacted by the Legislature of the State of Kansas:

Section 1. K.S.A. 58-2221 is hereby amended to read as follows: 58-2221. Every instrument in writing that conveys:

(a) Real estate;

(b) any estate or interest created by an oil and gas lease or;

(c) any estate or interest created by any lease or easement involving wind resources and technologies to produce and generate electricity; or

(d) whereby any real estate may be affected, proved or acknowledged, and certified in the manner hereinbefore prescribed, may be recorded in the office of register of deeds of the county in which such real estate is situated:--Provided. It shall be the duty of the register of deeds to file the same for record immediately, and in those counties where a numerical index is maintained in ~~his-or-her~~ the register of deeds' office, the register of deeds shall compare such instrument, before copying the same in the record, with the last record of transfer in ~~his or--her~~ the register of deeds' office of the property described and. If the register of deeds finds such instrument contains apparent errors, ~~he-or-she~~ the register of deeds shall not record the ~~same--untill--he-or-she-shall-have-notified-the-grantee-where~~ instrument until the grantee has been notified, if such notice is reasonably possible.

The grantor, lessor, grantee or lessee or any other person conveying or receiving real property or other interest in real property upon recording the instrument in the office of register of deeds shall furnish the register of deeds the full name and last known post-office address of the person to whom the property is conveyed or ~~his-or-her~~ such person's designee. The register of deeds shall forward such information to the county clerk of the

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county who shall make any necessary changes in address records for mailing tax statements.

Sec. 2. K.S.A. 58-2221 is hereby repealed.

Sec. 3. This act shall take effect and be in force from and after its publication in the statute book.

**TESTIMONY OF JO ANN HEIMAN
CHIEF, CHEMICAL RISK INFORMATION BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 7
FOR THE HEARING BEFORE THE
UTILITIES COMMITTEE**

JANUARY 22, 2004

Good morning, Chairman Clark and members of the committee. My name is Jo Ann Heiman. I am the branch chief for the Chemical Risk Information Branch in the Air, RCRA and Toxics Division of the U.S. Environmental Protection Agency. Thank you for inviting me to talk to you about polychlorinated biphenyls or PCBs.

PCB chemicals have been found to cause skin lesions, swollen limbs, eye and liver problems, and may cause cancer and birth defects. PCBs also tend to become more concentrated as they move up the food chain, and are extremely slow to break down in the environment.

The authority to regulate PCBs and other industrial chemicals was granted to EPA under the Toxic Substances Control Act - known as TSCA - on October 11, 1976. TSCA gives EPA broad authority to regulate the manufacture, use, distribution in commerce, and disposal of chemical substances. Due to the nature of this law, the regulation of chemicals, TSCA is federally-managed law and is not delegated to states.

Specifically, Section 6 (e) of TSCA, bans the manufacture, processing, distribution in commerce and use of PCBs, and requires regulations for PCB disposal, marking, and labeling.

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Additionally, it gives EPA the authority to relax the ban through rule-making if EPA demonstrates that manufacturing, processing, distribution in commerce, or use will not present an unreasonable risk of injury to health or the environment.

PCBs are mixtures of synthetic organic chemicals that were manufactured worldwide and used in thousands of situations where properties of non-flammability, stability to heat and effectiveness as a plasticizer were required. EPA has concluded that PCBs are resistant to degradation and that they bioaccumulate and bioconcentrate in the fatty tissue of organisms. PCBs are very stable compounds that can persist for years when released into the environment. They range in consistency from oily liquids to waxy solids and were developed primarily for use as a coolant in electrical equipment: transformers, capacitors, electro-magnets, and heat transfer and hydraulic systems. PCBs have also been used as plasticizers in paints, adhesives, caulking compounds, and old fluorescent lighting fixtures. It is estimated that approximately 1.24 billion pounds of PCBs have been introduced into commerce since 1929.

EPA has controlled the waste disposal of PCBs since February 1978. PCB waste must be destroyed by incineration or disposed in approved landfills. In addition, PCB containers and PCB products must be labeled.

On April 19, 1979, EPA issued final regulations to prohibit the manufacture, processing, distribution in commerce, and "non-enclosed" (open to the environment) uses of PCBs unless specifically authorized or exempted by EPA. "Totally enclosed" uses (contained, and therefore exposure to PCBs is unlikely) were allowed to continue for the life of the equipment,

specifically, in existing enclosed electrical equipment under carefully controlled conditions.

On April 2, 1987, EPA established a policy for the cleanup of spilled PCBs. In establishing the cleanup policy for typical PCB spills, EPA recognized that the risks posed by spills of PCBs vary, depending on the spill location and how much is spilled. The PCB Spill Cleanup Policy requires cleanup of PCBs to different levels depending upon spill location; the potential for exposure to residual PCBs remaining after cleanup; the concentration of the PCBs initially spilled; and the nature and size of the population potentially at risk of exposure. EPA designed this cleanup policy to be a self-implementing procedure for a general, moderately sized site where there would be low residual environmental impact from remedial activities.

An incident I have been told you were interested in was the PCB spill cleanup in Crawford County, Kansas. A tornado damaged three PCB-contaminated regulators on May 4, 2003. Both Westar and Haz-Mat responded to the incident. Westar initially removed the damaged regulators and the Haz-Mat team did the initial spill cleanup.

Westar, using the PCB cleanup policy, sampled the oil and found that it contained approximately 200 parts per million PCBs. Westar removed the contaminated soil and disposed of the PCB contaminated material properly as required by policy. This was done in consultation with EPA. Westar has agreed to provide EPA with a copy of its final cleanup report.

Again, thank you for this opportunity to discuss the PCB requirement and I will be happy to answer any questions you may have.



February 2001

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- [ToxFAQ™ en Español](#) 32k
- [Public Health Statement](#) 125k
- [Toxicological Profile](#) 13.6MB

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ToxFAQs™
for
Polychlorinated Biphenyls (PCBs)
(Bifenilos Policlorados (BPCs))

This fact sheet answers the most frequently asked health questions about polychlorinated biphenyls (PCBs). For more information, you may call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Polychlorinated biphenyls (PCBs) are a mixture of individual chemicals which are no longer produced in the United States, but are still found in the environment. Health effects that have been associated with exposure to PCBs include acne-like skin conditions in adults and neurobehavioral and immunological changes in children. PCBs are known to cause cancer in animals. PCBs have been found in at least 500 of the 1,598 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are polychlorinated biphenyls (PCBs)?

Polychlorinated biphenyls are mixtures of up to 209 individual chlorinated compounds (known as congeners). There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs have no known smell or taste. Many commercial PCB mixtures are known in the U.S. by the trade name Aroclor.

PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment and can cause harmful health effects. Products made before 1977 that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and old microscope and hydraulic oils.

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What happens to polychlorinated biphenyls (PCBs) when they enter the environment?

- PCBs entered the air, water, and soil during their manufacture, use, and disposal; from accidental spills and leaks during their transport; and from leaks or fires in products containing PCBs.
- PCBs can still be released to the environment from hazardous waste sites; illegal or improper disposal of industrial wastes and consumer products; leaks from old electrical transformers containing PCBs; and burning of some wastes in incinerators.
- PCBs do not readily break down in the environment and thus may remain there for very long periods of time. PCBs can travel long distances in the air and be deposited in areas far away from where they were released. In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments. PCBs also bind strongly to soil.
- PCBs are taken up by small organisms and fish in water. They are also taken up by other animals that eat these aquatic animals as food. PCBs accumulate in fish and marine mammals, reaching levels that may be many thousands of times higher than in water.

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How might I be exposed to polychlorinated biphenyls (PCBs)?

- PCBs entered the air, water, and soil during their manufacture, use, and disposal; from accidental spills and leaks during their transport; and from leaks or fires in products containing PCBs.
- PCBs can still be released to the environment from hazardous waste sites; illegal or improper disposal of industrial wastes and consumer products; leaks from old electrical transformers containing PCBs; and burning of some wastes in incinerators.
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How can polychlorinated biphenyls (PCBs) affect my health?

The most commonly observed health effects in people exposed to large amounts of PCBs are skin conditions such as acne and rashes. Studies in exposed workers have shown changes in blood and urine that may indicate liver damage. PCB exposures in the general population are not likely to result in skin and liver effects. Most of the studies of health effects of PCBs in the general population examined children of mothers who were exposed to PCBs.

Animals that ate food containing large amounts of PCBs for short periods of time had mild liver damage and some died. Animals that ate smaller amounts of PCBs in food over several weeks or months developed various kinds of health effects, including anemia; acne-like skin conditions; and liver, stomach, and thyroid gland injuries. Other effects of PCBs in animals include changes in the immune system, behavioral alterations, and impaired reproduction. PCBs are not known to cause birth defects.

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How likely are polychlorinated biphenyls (PCBs) to cause cancer?

Few studies of workers indicate that PCBs were associated with certain kinds of cancer in humans, such as cancer of the liver and biliary tract. Rats that ate food containing high levels of PCBs for two years developed liver cancer. The Department of Health and Human Services (DHHS) has concluded that PCBs may reasonably be anticipated to be carcinogens. The EPA and the International Agency for Research on Cancer (IARC) have determined that PCBs are probably carcinogenic to humans.

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How do polychlorinated biphenyls (PCBs) affect children?

Women who were exposed to relatively high levels of PCBs in the workplace or ate large amounts of fish contaminated with PCBs had babies that weighed slightly less than babies from women who did not have these exposures. Babies born to women who ate PCB-contaminated fish also showed abnormal responses in tests of infant behavior. Some of these behaviors, such as problems with motor skills and a decrease in short-term memory, lasted for several years. Other studies suggest that the immune system was affected in children born to and nursed by mothers exposed to increased levels of PCBs. There are no reports of structural birth defects caused by exposure to PCBs or of health effects of PCBs in older children. The most likely way infants will be exposed to PCBs is from breast milk. Transplacental transfers of PCBs were also reported. In most cases, the benefits of breast-feeding outweigh any risks from exposure to PCBs in mother's milk.

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How can families reduce the risk of exposure to polychlorinated biphenyls (PCBs)?

- You and your children may be exposed to PCBs by eating fish or wildlife caught from contaminated locations. Certain states, Native American tribes, and U.S. territories have issued advisories to warn people about PCB-contaminated fish and fish-eating wildlife. You can reduce your family's exposure to PCBs by obeying these advisories.
- Children should be told not play with old appliances, electrical equipment, or transformers, since they may contain PCBs.
- Children should be discouraged from playing in the dirt near hazardous waste sites and in areas where there was a transformer fire. Children should also be discouraged from eating dirt and putting dirty hands, toys or other objects in their mouths, and should wash hands frequently.
- If you are exposed to PCBs in the workplace it is possible to carry them home on your clothes, body, or tools. If this is the case, you should shower and change clothing before leaving work, and your work clothes should be kept separate from other clothes and laundered separately.

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Is there a medical test to show whether I've been exposed to polychlorinated biphenyls (PCBs)?

Tests exist to measure levels of PCBs in your blood, body fat, and breast milk, but these are not routinely conducted. Most people normally have low levels of PCBs in their body because nearly everyone has been environmentally exposed to PCBs. The tests can show if your PCB levels are elevated, which would indicate past exposure to above-normal levels of PCBs, but cannot determine when or how long you were exposed or whether you will develop health effects.

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Has the federal government made recommendations to protect human health?

The EPA has set a limit of 0.0005 milligrams of PCBs per liter of drinking water (0.0005 mg/L). Discharges, spills or accidental releases of 1 pound or more of PCBs into the environment must be reported to the EPA. The Food and Drug Administration (FDA) requires that infant foods, eggs, milk and other dairy products, fish and shellfish, poultry and red meat contain no more than 0.2-3 parts of PCBs per million parts (0.2-3 ppm) of food. Many states have established fish and wildlife consumption advisories for PCBs.

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References

Agency for Toxic Substances and Disease Registry (ATSDR).

2000. Toxicological Profile for polychlorinated biphenyls (PCBs).
Atlanta, GA: U.S. Department of Health and Human Services,
Public Health Service.

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Where can I get more information?

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

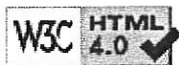
For more information, contact:

Agency for Toxic Substances and Disease Registry
Division of Toxicology
1600 Clifton Road NE, Mailstop E-29
Atlanta, GA 30333
Phone: 1-888-42-ATSDR (1-888-422-8737)
FAX: (404)-498-0093
Email: ATSDRIC@cdc.gov

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U.S. Department of Health and Human Services

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**Testimony before the
Senate Utilities Committee
By
William L. Eastman, Director Environmental Services
Westar Energy
January 22, 2004**

Chairman Clark and members of the committee, I am Bill Eastman,
Director, Environmental Services for Westar Energy.

Thank you for the opportunity to answer your questions this morning about polychlorinated biphenyls, better known as PCBs, which the electric utility sector used extensively from the early 1900s until it was banned.

**Item #1 - The extent which PCB transformers can be identified and
their location.**

Westar Energy maintains two databases that track this type of oil-filled equipment. One database tracks the lower voltage oil-filled equipment that serves our distribution system and generally includes equipment containing smaller volumes of oil (less than 1,000 gallons). This equipment serves our residential, commercial and industrial customers. The second database tracks the large oil-filled equipment (1,000 -5,000 gallons) that supports our transmission system. The majority of this equipment is located in the 615 substations located across our service territory.

Westar Energy has a professional environmental staff of thirteen scientists, engineers and technical specialists who work full-time with electric utility environmental issues. The management of PCBs is one area we take very seriously. Of my staff of thirteen, two have primary responsibility for PCB management within Westar Energy with one staff member spending the majority of his time on this program.

I will describe our PCB mitigation efforts in more detail in answer to Item 4.

Item #2 - The number of known transformers/voltage regulators in the Kansas distribution system, which contain PCBs.

The only definitive way to know if a transformer has oil contaminated with PCBs is to draw a sample and have it tested at an approved lab. For our distribution transformers that contain a relatively small amount of oil, we replace the entire transformer when they come out of service rather than testing each of them. Each of our larger transformers, which contain thousands of gallons of oil, has been tested and is identified in our database. Westar Energy owns 254,007 transformers in our distribution system. From our testing data during disposal of these transformers, we have found that about 90% have no PCBs in their oil. We own 1,603 transformers in our transmission system. Each of these has been tested, and 42 have PCB concentrations greater than the regulatory limit of 50 parts per million. We

also own 582 regulators that contain volumes of oil smaller than the large transformers (e.g. 75 gallons). The regulators are handled in the same manner as the distribution transformers. Once they are taken out of service, they are sent to an out-of-state disposal facility.

Item #3 - Problems identified with the disposal of transformers containing PCBs.

Westar Energy contracts with a PCB disposal facility, TDS in Tonkawa, Oklahoma, which receives all of the contaminated equipment. TDS is a licensed and permitted facility that meets the requirements for proper handling and disposal of PCB-contaminated equipment, oil and debris. The fluids are removed from the equipment by TDS and segregated according to PCB levels, and the remaining shell and core are dismantled and recycled.

Westar Energy has performed an audit on this facility, and internal procedures require the contract be re-bid every two years to ensure that the disposal costs remain competitive and the facility maintains the proper permits for handling PCBs. To date, we have not experienced any problems with the disposal of PCB equipment by TDS.

In addition, we contract with two Kansas-based firms, HazMat Response in Olathe and Wichita, and Eagle Environmental in Wichita, which handle onsite cleanup of large oil spills. These firms have complied with all

environmental regulations associated with the cleanup of oil spills.

Item #4 - Describe actions to replace transformers containing PCBs over the past ten years, the net results of those actions, and plans for the future regarding transformers containing PCBs.

The largest percentage of our distribution transformers serve our residential customers. Westar Energy has an aggressive program to retire residential distribution transformers manufactured before 1980. If these pre-1980 transformers are removed from service for any reason they are retired and sent to a licensed disposal facility. Approximately 3,000 distribution transformers are removed for this reason each year. Since these transformers must be sampled for PCB content during the disposal process, Westar Energy is able to track the overall trends of PCB content in these transformers. The latest data shows that 90% of all transformers sent to the disposal facility contain no PCBs, about 5% are classified as non-regulated transformers containing less than 50 parts per million PCBs, about 4% are classified as PCB-contaminated with 50 to 499 parts per million PCBs and about 1% of the transformers are classified as PCB transformers containing greater than 499 parts per million PCBs. Westar Energy is systematically removing distribution transformers that contain PCBs from our system and will continue this process until all are replaced.

The 1,603 transmission transformers located at our substations and have been sampled and analyzed for PCB content. These transformers contain the largest volumes of oil, which translates to the potential of containing the most PCBs. Forty-two have been identified as having a PCB content that makes them subject to the PCB regulations.

Westar Energy uses the sample results to perform a structured risk assessment of all substations with a focus on potential oil releases and subsequent impacts on the environment. Substations with transformers containing higher concentrations of PCBs and located near sensitive areas, such as waterways, receive a higher priority for risk reduction. For these higher priority substations, operational plans are developed to mitigate the risk and may involve retro-filling, replacement or construction of secondary containment structures. This is an ongoing program that will result in a continual decrease of PCB-containing equipment in all Westar Energy substations and the associated risks.

Westar Energy is committed to handling all PCB oil-filled equipment in an environmentally appropriate and regulatory compliant manner.

I will be glad to answer your questions at the appropriate time.

PCB Presentation

To the Kansas Senate Utilities Committee

January 22, 2004

Good morning Chairman Clark and members of the committee. My name is Michael V. Engel and I'm the Vice President of Operations and Engineering for Midwest Energy, Inc in Hays, Kansas.

First, I will provide a little background on Midwest Energy. We are a member owned cooperative serving over 80,000 electric and natural gas customers in 41 western Kansas counties. We have 274 employees at over 30 locations and 10 customer service offices to serve our owner/customers.

Second, I would like to address the questions as submitted by staff resulting from a PCB incident in the State of Kansas

Question 1:

Tell the committee the extent to which you can identify transformers, which contain PCBs and their location throughout Midwest Energy's, Inc. distribution system.

Answer

Midwest has 31 units listed below with their respective PCB concentrations. The last 3 are "pure pyranol*" transformers located at Ross Beach Station (these are registered with the EPA as required). This list identifies the larger PCB transformers of all Midwest's distribution substations. *(Pyranol is pure PCB, and tests at 900,000 to 1,000,000 PPM, whereas most of our regular transformers that test over 50 PPM have only small concentrations of Pyranol in the regular mineral oil).

As far as distribution class (pole type) transformers that are over 50 ppm, Midwest Energy does not have any accounting of how many or where the PCB contaminated transformers are. If a spill occurs, Midwest treats pole transformers that have not been tested as PCB contaminated transformers (as allowed by EPA regulations). It is not mandatory to test these transformers and therefore we cannot account for any locations or how many PCB contaminated transformers we have. Our PCB database has 11,000+ entries from the past 23 years of testing distribution transformers. Many of these units were tested and disposed of during their routine maintenance cycles, or when they came through Midwest's maintenance shop for repair or evaluation. All PCB or PCB contaminated pole type transformers have been retrofilled, junked or disposed of. Hence, the database pertains to the units still in the field that are less than 50 ppm, or non-PCB units.

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Question 2:

Tell the committee the number of transformers, which contain PCBs in Midwest's distribution system.

Answer:

Midwest Energy's substations that are PCB or PCB contaminated

<u>SUBSTATION LOCATION</u>	<u>PPM</u>	<u>Phase</u>
MUNJOR	291	3
SOUTH MAIN (HAYS)	473	3
GRAINFIELD REG	325	3
N. LAYTON	321	1
PRESTON	310	3
EDMOND	291	1
HYDROCARBON	290	1
EDMOND	288	1
KXXX	284	1
EDMOND	265	1
KXXX	227	1
KXXX	220	1
SOUTH COLBY	200	3
N. LAYTON	187	1
HYDROCARBON	160	1
HYDROCARBON	140	1
LUPFER JUNCTION	116	3
LEWIS	111	3
LYONS	100	3
LUTHERN	73	1
FAIRPORT RIVER	72	3
LUTHERN	68	1
BIRD CITY PU	67	3
ELLIS OIL	64	1
PAWNEE	60	3
KRAMPE	55	3
WAKEENEY OIL	54	1
WAKEENEY OIL	54	1
BEACH STATION	PYRANOL	3
BEACH STATION	PYRANOL	3
BEACH STATION	PYRANOL	3

In addition, Midwest's Maintenance crews test approximately 400 to 600 distribution

pole type transformers annually. These transformers are brought in as they are moved for re-use, have maintenance criteria, or need to be disposed of due to complete failure of the transformer.

<u>Year</u>	<u>Total tested</u>	<u>Number disposed</u>	<u>% PCB, Contaminated or Disposed</u>
1998	710	29	4.08%
1999	529	29	5.48%
2000	599	38	9.52%
2001	356	20	5.61%
2002	351	38	10.83%
2003	450	39	8.67%

Midwest estimates that 7.5% (3,199) of its 42,649 distribution transformers are PCB or PCB contaminated. All PCB or PCB contaminated units tested shall be disposed of. It is expected that Midwest will be nearly PCB free within the next 20 years.

Question 3:

Tell the Committee what problems Midwest has disposing of transformers containing PCBs when they are replaced.

Answer:

We do not have problems with disposing of the PCB units. Midwest maintenance crews normally set up 2 disposals per year with Clean Harbors Environmental Services, Inc. (formerly Safety Kleen, USPCI, Laid Law, etc). Three issues that require timely and accurate attention are (1) record keeping with paperwork involved, (2) storage facility upkeep, and (3) complete readiness for EPA inspections.

Question 4:

- 1. Describe for the Committee Midwest's actions to replace these transformers containing PCBs over the past ten years, the net result of those actions, and Midwest's plans for the future regarding transformers containing PCBs.**

Answer:

Midwest's actions are to continue disposing of any PCB or PCB contaminated pole type transformers as we find them as we have done in past years. Midwest shall remove any units from service that have been tested >49 ppm, and either retrofit (if the transformer can be reused), or dispose of the oil and incinerate the carcass.

We have tested all of the original Midwest distribution power substation equipment

including substation transformers and voltage regulators throughout the system. Any substation regulators that were "PCB or PCB contaminated" have been brought into the maintenance shop and retrofilled or disposed of (as we dispose of distribution transformers). We still may have some "line bank regulators" that are PCB or PCB contaminated. These are tested when they come into the maintenance shop for repair or for disposal purposes.

Midwest removed the PCB transformer units at its Colby Plant and one at Ross Beach Station in 2002, which were on the Federal Register. The rest of the PCB plant transformers are budgeted for disposal in 2004. They are in areas that are easily contained as well.



kansasmunicipal**utilities**

Submitted Testimony Provided the

Senate Utilities Committee

January 21, 2004

*Colin Hansen
Executive Director
Kansas Municipal Utilities*

PCBs in Electric Distribution Equipment

Thank you for the opportunity to provide written testimony regarding the use of transformers and other equipment in electricity distribution that may contain Polychlorinated Biphenyls (PCBs).

Kansas Municipal Utilities (KMU) is the statewide association representing 158 municipal electric, natural gas, water and wastewater utilities. Formed in 1928, KMU members currently provide utility services to over one million Kansans.

As you are aware, it was concern over the toxicity and persistence in the environment of PCBs that led Congress in 1976 to enact §6(e) of the Toxic Substances Control Act (TSCA) that included, among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCBs. The act effectively legislated true "cradle to grave" management of PCBs in the United States.

In Kansas, 120 cities own and operate a municipal electric utility. Over the past several decades, exposure to PCB-containing transformers and equipment in these municipal systems has varied widely by the size of the utility and the age of its distribution system. As such, the association surveyed a number of members in response to the Kansas Legislative Research Department's questions on PCBs. The survey was meant to provide a representative sampling of the KMU membership and the include utilities of various sizes and from several regions across the state.

We believe the responses indicate an intimate working knowledge of existing PCB regulations by the employees of member systems. In addition, the survey provides an excellent illustration of the tremendous amount of time and

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resources that have been allocated by municipal electric utilities in Kansas to address potential PCB contamination issues. The actual survey responses to each question are provided below.

Extent to Which the Utility Can Identify Transformers Which Contain PCBs and Their Location in the Distribution System.

- "No PCB transformers or other electrical devices left in the system."
- "The city maintains a computer mapping system which identifies all system facilities including transformers, capacitors and regulators. Map symbols used are tied to database attributes which contain all data about the particular facility, including serial numbers, PCB levels, test date, etc."
- "The [utility] has identified and removed all equipment containing more than 48 parts per million (ppm) of PCB."
- "We have test results for all but eight transformers on our system. All transformers with PCBs have been retrofit and retested."
- "We can identify any and all transformers on our system for PCB content by lab result or manufacturer certification."
- "We can identify all of our transformers and their location."
- "Unless the tag says "Non-PCB," you must assume that it contains PCB or until you test it and certify it. (We also test any transformer that has a manufacturer's date earlier than 1992, because we have found re-manufactured transformers to contain PCBs)."

2. Number of Transformers in the Distribution System Containing PCBs

- "Zero."
- "We presently have no equipment containing more than 48 ppm PCB."
- "Of the 2,024 total units, 455 or 22.4% contain some PCB contamination ranging from <1 to 49 ppm. No facilities exists with >50 ppm."
- "We have approximately 5,000 transformers on our system and have no transformers over 50 ppm PCB, due to efforts to identify those and either retrofit or replace them. Of the units we have tested, the ones remaining in service, less than 50 ppm, are as follows,
 - 188 transformers at 1-2 ppm
 - 250 transformers at 3-10 ppm
 - 60 transformers at 11-20 ppm
 - 43 transformers at 21-30 ppm
 - 17 transformers at 31-40 ppm
 - 1 transformer at 41 ppm
 - 1 transformer at 42 ppm
 - 1 transformer at 46 ppm(a total of 561 transformers from 1 to 46ppm PCBs)"
- "240 transformers in our distribution system containing PCBs, all are below 50 ppm. Of the 240 transformers:

- 189 measured 1-10 ppm
- 30 measured 11-20 ppm
- 13 measured 21-30 ppm
- 4 measured 31-40 ppm
- 4 measured 41-50 ppm"
- "We have only 1 PCB-Contaminated (256ppm) transformer located at the power plant."
- "None that we know of, but we must assume there [are some remaining]. We must keep records for 10 years after the last transformer has become clean."

3. Problems Disposing of Transformers Containing PCBs When They Are Replaced

- "We have had no problems since all of our transformers have been retrofilled and with tests showing PCBs below 49 ppm."
- "None . We replace with new ones or, in the past, have retro-filled the transformer. We have since eliminated the retrofills. For the transformers that have PCBs, Safety-Kleen removes them and incinerates them and we are given a certificate of destruction."
- "We contracted with a company in Coffeyville, Kansas to remove any equipment containing more than 49 ppm PCB."
- "We contract with Solomon Electric for all disposal or remanufacture of these facilities. The company provides all data pertinent to our data base for continued compliance."
- "The transformer rebuilder that takes our surplus transformers, will not take anything over 49 ppm, so for us it is not a problem."
- "We have experienced no problems in disposing of our transformers."
- "Proper disposal by disposal companies has been an issue. We have had to pay multiple times to dispose of the same items and the clean-up costs associated with improper disposal by licensed disposal companies. Currently disposal companies are getting fewer and fewer, causing cost to go back up and final disposal within the one year regulatory requirement could be hard to meet."

4. Describe Actions to Replace PCB Transformers Over the Past Ten Years, the Net Result of Those Actions and Future Plans

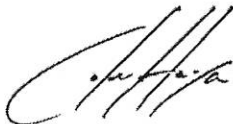
- "We began testing transformers for PCBs on March 11, 1985 and completed that process on October 2, 1991. As a result of that testing, the city began a replacement program, with 608 PCB free transformers installed to date."
- "We have identified and removed all equipment containing more than 48 ppm PCB and require a clean certificate for all new purchases. We track by SER# and location of equipment."

- “Most of our transformer testing and retro-fitting program was completed over 10 years ago. Occasionally, we have to have a test done, but there are several companies who provide this service.”
- “The city was once caught in a paperwork violation which resulted in a consent order. We have since been compliant and really don’t have any problems. Our situation began when one of our street and alley mowers struck the ¼” drain plug on a transformer stored on the ground at our warehouse yard. This was only a 15 kilovolt pole mount but the oil leaked out on the ground. Our administrator at the time called in a report so the area would be handled and cleaned up properly. We tested the oil and soil samples which had a high PCB content (I think around 1500 ppm). We contracted for the clean up and eventually hauled three large trucks (18 wheelers) of soil to Georgia for disposal. The violations came when the resulting audit turned up some reporting that did not meet regulations (actually, in hindsight, we were seriously lax in our tracking and reporting procedures). In lieu of a major fine, we entered a Consent Order to get out of the \$36,000 in fines. To meet the consent order, we physically tested every facility in our system and subsequently removed and had destroyed every transformer with PCB’s greater than 50 ppm. We implemented a very good mapping and data base system to track all PCB’s and facilities on our system. As for our future plans, we have made the initial investment to be compliant and will remain that way. Our system works well and unless regulations change we will continue to operate within compliance.”
- “Since 1986, when we started an aggressive PCB program, we have spent quite a bit of money; over \$62,000.00 in analytical testing fees and in excess of \$270,000.00 on retro filling, disposal, and labor for collecting samples. Labor costs to retro fill and other transformer work is unknown. The result is that we know what we are dealing with and how to treat any unexpected release of fluid from these transformers and we have no hidden liability. As those units, that have any concentration of PCB’s in them, come into stock for replacement or service we generally retire them.”
- “The city, in 1993, started a proactive testing and identification program. 1,941 electrical devices were tested for PCB levels verified over a ten year period. 1,318 transformers were identified with unknown PCB levels and tested. Average laboratory cost was \$12.00 per sample (\$16,000.00 total). Average testing time for 2 man crew and bucket truck was 30 minutes per test (1000 hours @ \$150/hr.= \$150,000.00). The City decided to retrofill/reclassify 11 large transformers (average cost \$20,000 each x 11 = \$220,000.00 total) to make them non-PCB. The City also decided to dispose of all small transformers (2.5 to 500KVA) with > 40ppm of PCB’s. 174 transformers were identified with >40ppm and disposed (average cost of \$600.00 each x 174 for a total of \$104,000.00). 17 large capacitors

were also disposed (average cost of \$6,000.00 each for a total of \$102,000.00). We found about 10% of all electrical devices tested had some level of PCB's. 22 transformers (or 13% of the 174 transformers) were classified as PCB transformers (>500ppm) and 152 transformers were classified as PCB-Contaminated (>50ppm but <500ppm). The City has spent over \$700,000.00 over the last ten years to comply with the regulations and to try and get out of the PCB business."

- "Every time a transformer is taken down or moved, it goes into our PCB shed where we assign a test number. Then we take a test and send it to a certified lab and the lab sends us the results which we can then certify that the transformer is either 'Non-PCB' or contains PCB. Anything over 50 parts per million (ppm), we date with time of test, then we date the transformer for destruction. We have one year to have the transformer incinerated by Safety-Kleen. Anything 49 ppm or under, we can sell to transformer salvage or we can put it back in service with a certified decal containing the serial numbers, test numbers and dates for future salvage or use. There are a number of unknown PCB's still on our Distribution System, such as CTs, PT's, oilfield bushings and ballasts that we must assume contain PCB's, unless otherwise marked. To our knowledge, our transformers and capacitors are clean. We can assume that 90% of our Distribution System is clean since we have switched over from a 2400 to a 7620 system. (We have had a couple of 14400 transformers that have come back with 50 ppm)."

I again thank the committee for the opportunity to provide written testimony. Should you have any questions, comments or concerns regarding the testimony, please feel free to contact me at the phone number or addresses below.



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Board of Public Utilities MEMORANDUM

TO: Members of the Senate Utility Committee

FROM: Joe Dick, Regulatory Specialist

DATE: January 21, 2004

SUBJECT: PCB Information for Kansas Legislature
Hearing January 22, 2004

Background

The Kansas City, Kansas, Board of Public Utilities (BPU) is a municipal utility owned by the Unified Government of Wyandotte County/Kansas City, Kansas. BPU makes and distributes both electricity and drinking water in Wyandotte County and beyond. We operate three power stations and two drinking water plants to serve more than 67,000 electrical customers and 55,000 water customers in our Wyandotte County service area.

To serve our customers, we maintain more than 2,700 miles of electric transmission & distribution lines – enough to stretch from New York City to Los Angeles. We also operate and maintain 28 electrical substations and more than 10,000 pole-mounted and pad-mounted electrical transformers.

Polychlorinated Bi-phenyls (PCBs) were once used as transformer oils and could potentially be present in a few of the transformers that are still operating. PCB issues are important to BPU because they impact transformer management activities, transformer spill responses, and transformer oil waste disposal.

This testimony provides the following:

- Responses to PCB-related questions received from Raney Gilliland
- BPU Spill Response Procedures Checklist (Attached)
- Photos of electrical transformer environmental work (Attached)

1. Tell the Committee the extent to which you can identify transformers that contain PCBs and their location throughout your distribution system.

BPU utilizes “Transformer Management System (TMS)” software to manage all electrical transformers on its electrical system. Detailed information including type, manufacturer, size, serial number, location, history, and PCB details can be quickly accessed for all transformers. Distribution transformer and substation transformer results from testing conducted between 1987 to the present is included in the TMS database.

In addition, each transformer is sampled and the PCB concentration is known prior to junked transformer shipment off site.

2. Tell the Committee the number of transformers that contain PCBs in the distribution system.

Estimates on the number of transformers in the distribution system are difficult to ascertain. Based on the numbers of transformers returned to our transformer shop (Shop) from the system, we see that the vast majority of transformers contain PCB levels that are less than detectable.

Based on the results of analysis for each transformer at the Shop, we estimate that approximately 90% of all our transformers contain mineral oil *only* at less than detectable PCB concentrations. We further estimate that 9% contain PCB concentrations in the 0-49 ppm range and 1% in the 50-499 ppm range.

3. Tell the Committee what problems you have disposing of transformers containing PCBs when they are replaced.

BPU's greatest concern is not our own handling of PCB wastes or articles, but the final, off-site disposal locations. In recent years BPU has entered *de minimis* settlement agreements with the USEPA for the cleanup of two PCB-contaminated sites formerly operated as PCB waste disposal companies:

- PCB Treatment Inc. Site - Kansas City, Missouri and Kansas City, Kansas (\$193, 841.24)
- Osage Metals Site – Kansas City, Kansas (\$4,173.00)

BPU makes every effort to ensure that its waste shipments are transported, managed, and disposed of correctly. However, we believe that better, continuous feedback about the results of regulatory inspections, notices of violation, administrative fines, or other judgments rendered against waste disposal companies would help us track and make better decisions about the companies we chose to work with.

4. Describe for the Committee your actions to replace those transformers containing PCBs over the past ten years, the net result of those actions, and your plans for the future regarding transformers containing PCBs.

Since 1995, BPU verifies the PCB concentration of all transformers brought offline prior to shipment offsite. The Transformer Management System (TMS) database is consulted prior to testing to identify existing analytical data. If no data is available, it is tested for PCB content. PCB transformers and Non-PCB transformers are "junked" and sent to Solomon for disposal. All "junked" PCB transformers are accounted for on the Annual PCB Log at the end of the year.

BPU plans to continue rigorous monitoring and proper disposal of all junked transformers.

BPU Spill Response Procedures Checklist (Attached)

The checklist used by BPU's Environmental Services Department to investigate and report spills is attached.

Photos of electrical transformer environmental work (Attached)

The attached photos show a typical transformer spill situation (car into pole) and an atypical transformer spill situation (tornado aftermath).

SPILL RESPONSE PROCEDURES

Environmental Services Department
Board of Public Utilities
Kansas City, Kansas

ALL SPILLS

Environmental Services Department will respond to all spills that are reported to us.

The ESD responder will be responsible for ensuring that the spill is remediated, reported and documented properly.

All spills will be photographed and color copies, with site name, spill date and relevant info noted on the photos.

All spill responses will be logged on the spill tracker form in the file room.

All spills will be reported via fax to KDHE NEDO

The spill file will contain an MSDS for the material spilled.

GPS coordinates

SPILLS TO WATER SURFACE

Spills that enter ditches, creeks, storm drains or other surface waters will be reported by phone to NRC and KDHE.

TCRs will be used to document all calls to regulators (note spill report numbers and name/title of regulator).

Signed, detailed field notes of the BPU's spill response and remediation activities will be maintained for inclusion into the spill report file.

TRANSFORMER SPILLS

Transformers will be assumed to contain PCBs until proven otherwise.

The PCB status for all transformer spills will be documented in the spill file:

TRDS printouts

Field screening results (Lot No. and Exp Date) Comparison to Transformer Mfgr PCB Table,

FILE CHECKLIST for SPILL REPORTS

ALL SPILLS

Completed KDHE Spill Report Form

Fax cover sheet to KDHE NEDO

Spill photographs with site name, spill date and relevant info

Copy of MSDS for spilled material

GPS Coordinates

Log response on spill tracker form

SPILLS TO WATER SURFACE

Telephone Conversation Records for calls to NRC and KDHE.

Field Notes

TRANSFORMER SPILLS

Mfgr, Mfgr Date, SN for transformer spills

Documentation of PCB status:

- "TRDS" printouts
- Field screening results (Lot No. and Exp. Date)
- Comparison to Transformer Mfgr PCB Table
- Analytical results



“Typical” Transformer Spill Situation (1995)

Vehicle into utility pole with mounted transformer



“Atypical” Transformer Spill Situation (2003)

In the aftermath of the May 2003 tornado, Curt Deitz, BPU Senior Environmental Scientist, uses a portable GPS to verify the coordinates of a transformer buried in the debris.

**Testimony of Mr. Terry Eaton
Manager of Environmental Services**

**On behalf of the
Great Plains Energy**

Information Presentation on PCBs

**Submitted to the Senate Utilities Committee
January 22, 2004**

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January 22, 2004
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Testimony of Mr. Terry Eaton
Great Plains Energy
Manager of Environmental Services
January 22, 2004

Responses to Questions Regarding PCBs

1. Tell the Committee the extent to which you can identify transformers which contain PCBs and their location throughout your distribution system.

KCPL assumes responsibility to uphold applicable environmental regulations regarding PCB content of each of its transformers. These environmental regulations allow a company to assume a transformer contains above the regulatory amount of PCB yet continue to use the transformer until test results confirm that it contains less than the regulatory level of PCB's. KCPL assumes each transformer in our system contains above the regulatory level of PCB's and handles each transformer in accordance with the applicable environmental regulation.

Identifying all equipment containing levels of PCB's above the regulatory level would be a costly and disruptive task impacting our customer service capabilities. In order to check each individual transformer for PCB content in Kansas, KCPL would require extra crews, equipment and years to complete this task. It is not feasible for KCPL to divert this many resources away from our established maintenance program for such a duration while still fulfilling our basic responsibilities to our customers. Further complicating the process is the fact that some transformers cannot be tested without destroying them.

The cost in resources and money is secondary to the cost of disruption to our customers. Some customers would suffer multiple outages as their segment of the system was removed from service for each test. Scheduling outages is also not feasible due to the multitude of customers affected by outages, each with their own needs and conflicting schedules. KCPL would be able to predict outages, but the customers would have to adjust, regardless of the inconvenience or cost to them.

2. Tell the Committee the number of transformers that contain PCBs in your distribution system.

For the reasons previously stated, KCPL cannot accurately state how many transformers in our distribution system contain PCB's above the regulatory level.

KCPL can confirm that our substations and power plants do not contain any known transformers, which contain PCB's in excess of 500 ppm PCBs.

KCPL assumes there are an unknown number of transformers in use within our system that contain above regulatory level of PCB's. Manufacturing transformers containing regulatory levels of PCB was discontinued in the 1980's. KCPL's distribution system in the state of Kansas contains approximately 48,000 transformers, of which, a significant quantity were installed after 1980. It can be safely assumed they are below the regulatory level of PCB's.

Since the average life of a transformer is 30 years, quantities of transformers containing regulatory levels of PCB's may exist. Although the average life of a transformer is 30 years, KCPL has transformers that can last much longer depending on: load, seal integrity, storm damage, vehicle damage, power surges, animal damage, etc. Continuing to use these transformers is in direct compliance with the environmental regulations.

3. Tell the Committee what problems you have disposing of transformers containing PCBs when they are replaced.

The applicable environmental regulations are very specific regarding disposal procedures for transformers containing above regulatory levels of PCB's. Transformers, which contain PCB's above regulatory levels, must have special handling in the field and must be disposed of with special disposal companies. The prescriptive regulatory procedures for disposing have been established for several years and are functioning well.

The cost of disposing a transformer containing PCB above the regulatory levels is significant. Average salvage value for a transformer containing less than the regulatory level of 50 ppm PCB's is \$23.00; for transformers containing between 50 and 500 ppm PCB's there is no salvage value, but an average disposal cost of \$105.00; and for transformers containing in excess of 500 ppm PCB's, there is no salvage value and the disposal cost is \$532.00.

4. Describe for the Committee your actions to replace those

transformers containing PCBs over the past ten years, the net result of those actions, and your plans for the future regarding transformers containing PCBs.

KCPL has now replaced all known transformers containing PCB's in excess of 500 ppm in our substations and power plants. KCPL has an active program to replace any transformer containing PCB's above the regulatory level, when found, and to properly dispose of the transformer. Over the past 10 years, no PCB containing transformers have been reused or left in the field when discovered.

Senate Utilities Committee
January 21, 2004
Testimony of Gene Russell
Director of Environmental Services
Aquila, Inc.

Mr. Chairman and Members of the Committee;

My name is Gene Russell and I am Director of Environmental Services for Aquila. We appreciate the opportunity to testify today on behalf of Aquila, Inc. My primary responsibility is to direct the development and maintenance of management systems for Aquila's environmental obligations within our operations consistent with our environmental policy and corporate goals. I am also responsible for our assessment programs that verify operations are meeting Aquila's environmental expectations. Our Kansas electric operations were formerly known as West Plains Energy.

My purpose today is to respond to the questions submitted by the Kansas Senate on behalf of Aquila for our Kansas Electric operations. I understand the aspect and impacts of our distribution system as it relates to the environment.

As used in my responses, "PCB transformers" and "PCB-contaminated Electrical Equipment" refer to the regulatory definitions of those terms. "Non PCB" is a regulatory definition as well as an industry term that signifies and classifies transformers less than 50 parts per million ("ppm"). "PCB transformers" are transformers that contain PCB's at a concentration of 500 ppm or greater. "PCB-contaminated Electrical Equipment" are transformers that contain 50 ppm or greater but less than 500 ppm.

1. Tell the Committee the extent to which you can identify transformers which contain PCBs and their location throughout your distribution system.

West Plains was purchased in 1991 by Aquila. Prior to our purchase and beginning in 1987, West Plains began an extensive inventory and testing program to identify whether its transformers contained PCB's. In service transformers and on hand stock were identified by manufacturing company and serial number throughout the entire West Plains system. Each type of transformer was also identified by location. By the end of 1990, all transformers had been identified and were classified as PCB transformers, PCB-Contaminated Electrical Equipment as appropriate, or Non PCB electric equipment.

In addition to this identification classification process, West Plains either removed transformers or the PCB-containing oil from equipment classified as PCB-Contaminated Electrical Equipment or PCB transformers. This was done to bring concentration of PCB's in the oil to be under the level that would classify the equipment as PCB transformer or PCB-Contaminated Electrical Equipment.

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Since Aquila's purchase of West Plains in 1991, Aquila has continued to monitor and maintain records of its transformers to identify the manufacture, model, and age of the transformer, the year and date it was tested for PCB's, as well as the results of those tests.

2. Tell the Committee the number of transformers which contain PCBs in your distribution system.

Based upon our inventory, testing, and subsequent removal of PCB-containing oil from all equipment classified as PCB-contaminated electrical equipment or PCB transformers that were found, we are not aware of any transformers in our system that would be classified as PCB-contaminated electrical equipment or PCB-transformers in the Kansas distribution system.

3. Tell the Committee what problems you have disposing of transformers containing PCBs when they are replaced.

We have not had any recent problems to my knowledge in disposing of transformers containing PCB's. We occasionally find some equipment that contain PCB's identified through our testing, and the material is disposed of using approved methods. In addition to our Kansas operations, other divisions come across PCB containing material.

If any are discovered, we use an Aquila approved PCB disposal vendor. Many are disposed of through a contract with Clean Harbors, which is the current owner of the Coffeyville, KS, PCB disposal facility. This is currently the only Aquila approved vendor for our Colorado, Kansas and Missouri operations for this type of waste.

Aquila has been involved in the clean up of disposal companies that have gone bankrupt that had operations needing attention. This is under the direction of the Environmental Protection Agency through the disposal company's insolvency. When this occurs, Aquila has participated in the clean up of operations through a financial contribution, or assisting a steering committee in the clean up of the site. This is done under the EPA's approved clean up plans.

4. Describe for the Committee your actions to replace those transformers containing PCBs over the past ten years, the net result of those actions, and your plans for the future regarding transformers containing PCBs.

Over the past 10 years Aquila has continued to test all transformers prior to disposal to assure that they do not contain PCBs. In the event that any equipment contains PCBs, they are disposed of at a facility permitted to receive PCB-containing material. As explained in the first question, we believe that all PCB transformers and PCB-Contaminated Electrical Equipment were removed from the West Plains distribution system more than 10 years ago.

The actions regarding testing and removal of PCB-containing oil from PCB transformers and PCB-Contaminated Electrical Equipment is further described as follows.

The process included first obtaining an inventory of our transformers and information by manufacturer. This information, along with a serial number, was used to determine if the PCB information could be obtained for the transformers in our system.

For those transformers that could not be identified by the manufacturer's nameplate as PCB free, an independent laboratory tested the oil. The transformer oil was sampled by drilling into the casing, extracting oil from the transformer, and then sending the oil to a laboratory. The test result would then be used to classify the equipment.

For those transformers that contained oil with a PCB concentration of 50 PPM or greater, the transformer was either removed from service for off-site disposal, or drained and refilled with non-PCB containing oil. The PCB-containing oil would then be sent offsite for disposal.

Our current practice is to evaluate and test each transformer coming out of the Kansas operations distribution system. The evaluation includes checking to see if the transformer was manufactured prior to 1980, or if there is an identification plate on the transformer. The identification plate or manufacturing date indicates prior testing or that from manufacturing the transformer contains non-PCB oil.

Thank you Mister Chairman, and the members of the committee. I would be happy to answer any questions you may have at this time.

Information Prepared By:

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January 22 - Meeting before Kansas Senate Utilities Committee

Statement of Fact: There were no PCB or PCB contaminated transformer spills in the State of Kansas from the May 4 tornados on the Empire system.

Question #1 - The extent which PCB transformers can be identified and their location:

Beginning in January 1982, The Empire District Electric Company has tested all major oil containing electric components in our substations to include power transformers, voltage regulators, and oil circuit breakers. A total of 10 substations are located in the State of Kansas, of these two have in service oil filled equipment that is PCB Contaminated greater than 50 ppm.

Kansas locations with PCB contaminated transformers & voltage regulators remaining in service are listed below:

Substation # 278 - 1601 East Front Street, - Galena - Cherokee County
Substation # 388 - 13247 SW Star Road - Chetopa - Cherokee County

The typical pole mounted distribution transformers that provide electric power to homes

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or that are used for commercial business applications are inspected for PCB Contamination when they are removed from service for repair, or replaced as part of an upgrade service order. Once removed from service, transformers that do not have data plates certifying they contain no PCB Contaminated oil are tested by Empire Personnel before the unit is repaired, placed back into service or shipped offsite for disposal. The oil test results determine if the item will require special disposal handling as a hazardous waste. The manufacture of PCB's as a chemical has been banned by law since 1978. With perhaps a few exceptions in the very early years, all transformers manufactured after July 6, 1979, have a data plate that certifies the PCB free status of the equipment. All electrical service equipment found to contain PCB Contamination > 50 ppm, are stored for disposal and promptly scheduled for pick up and decommissioning by an EPA licensed facility. In accordance with EPA regulations Empire receives a certificate documenting the approved disposal method when the oil has been chemically detoxified and the equipment scrapped for metal recycling, incinerated, or placed in an EPA approved land fill.

Question # 2 - The number of known transformers / voltage regulators in the Kansas distribution system which contain PCB's:

PCB Contaminated Transformers

Location	Serial Number	Gallons of Oil	PPM
Sub # 278 - Galena, KS	# RBP - 177914,281	gallons	170 ppm
	LTC	360 gallons	270 ppm
Sub # 388 - Chetopa, KS	# D -557190 V-Reg	70 gallons	415 ppm
Sub #388 - Chetopa, KS	# D - 557452 V-Reg	70 gallons	530 ppm
Sub #388 - Chetopa, KS	# D - 557191 V-Reg	70 gallons	209 ppm

Because contaminated transformers are not externally marked the actual PCB status of any Pre-1979 distribution pole mounted and commercial pad mount transformers can not be known unless first taken out of service, opened, and tested by drawing a small vial of oil for laboratory analysis. In 2003, The Empire District Electric Company took 765 oil samples of unlabeled Pre-1979 manufactured transformers that had been removed from service in all the states of our distribution territory. A total of 35 of these Pre-1979 transformers or only about 5% tested positive for PCB contamination > 50 ppm. Total PCB contamination positive results for pole mounted transformers, including all years of manufacture, is about 1%. This percentage is steadily decreasing.

Question # 3 - Problems identified with the disposal of transformers containing

PCB's:

Except for two shipments in the mid 1980's to an Environmental Protection Agency (EPA) licensed facility that later filed for bankruptcy and was closed within a few months of our manifested shipment, Empire has incurred no problems with the prompt disposal of PCB contaminated oil, transformers, or other contaminated equipment.

Since 1989, Empire has exclusively used Clean Harbors Environmental Services and its predecessor companies to process, treat and dispose of PCB Contaminated oil, dirt debris and electrical equipment. Typically all contaminated equipment is shipped directly to their EPA and Kansas State Permitted Hazardous Waste Management Facility located in Coffeyville, Kansas

Question # 4 - Describe actions to replace transformers containing PCB's over the past ten years, the net results of those actions, and plans for the future regarding transformers containing PCB's.

Over the past ten years Empire has been environmentally pro-active in the discovery and removal of PCB contaminated electrical equipment. No out of service PCB Contaminated equipment is stored for any future reuse option unless the oil has been retro filled and the unit reclassified as Non-PCB. All related inventory component parts to include replacement bushings have been tested, and all identified PCB contaminated items previously held in storage for potential reuse as replacement parts have been properly disposed of.

In 2002 all large PCB capacitors, a total of 304 including 6 in Kansas, were removed from active service and replaced with Non-PCB capacitors as part of an environmental improvement project. These capacitors contained very high concentrated amounts of PCB's. The total cost of this project exceeded \$150,000.00.

In addition to the environmental project, the Safety & Environmental Services Department budgets funds exclusively for the discovery and disposal of PCB contaminated equipment and waste. During the last 10 years over \$ 470,000 has been spent by Empire to routinely test, retro fill, or dispose of PCB contaminated electrical equipment, drained oil, or contaminated soil debris throughout our service territory in Kansas, Missouri, Oklahoma, and Arkansas. The estimated cost associated with transformers located in Kansas is \$38,000.

Empire will continue it current program or testing and disposal of PCB transformers, equipment, oil, and debris.

Senate Utilities Committee

Testimony of Dave Holthaus Manager, Governmental Affairs Kansas Electric Cooperatives, Inc.

January 22, 2004

Good morning, Chairman Clark and members of the Committee. My name is Dave Holthaus, Manager of Governmental Affairs for Kansas Electric Cooperatives, Inc. (KEC), the statewide association of electric cooperatives in Kansas. KEC has 29 distribution cooperative members that serve end-use customers at retail in Kansas. It also has two generation and transmission cooperative members, those being Kansas Electric Power Cooperative (KEPCo) and Sunflower Electric Power Corporation (Sunflower).

I quickly surveyed our membership to get responses to the four questions we were instructed to answer. Each of the cooperatives maintains their own records on PCB equipment and although not all cooperatives have responded to date, a very good cross section (size/location) of cooperatives did respond. In the essence of time, I took the liberty of condensing those responses down into four short answers.

Questions for electric utilities to answer during the January 22 hearing on transformers containing PCBs

- 1. Tell the Committee the extent to which you can identify transformers which contain PCBs and their location throughout your distribution system.**

Of the 14 cooperatives answering the survey, two replied they had no PCBs in their systems. Both had tested all transformers. The remaining 12 stated they had no known PCB transformers in the system but they are testing each transformer when it is

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pulled down from the pole. If it is found to contain PCBs, it is taken out of service and disposed of. Many cooperatives continuing to test have already tested transformers installed at public use buildings, such as schools, churches, community buildings, and retail stores and feed lots. No PCB contaminated transformers are returned to service.

2. Tell the Committee the number of transformers which contain PCBS in your distribution system.

As I mentioned, two of the cooperatives replied that they were PCB-free on their systems. The remaining cooperatives are testing each transformer as it is taken out of service. All cooperatives commented although they did not know the exact number of PCB contaminated transformers in their system, they felt sure the number was small (1-5%). One cooperative tested 1787 transformers over the past 10 years and three contaminated units were found; another found only 115 since 1980.

3. Tell the Committee what problems you have disposing of transformers containing PCBs when they are replaced.

All cooperatives reported that they have no problem associated with disposal of PCB transformers/oil. Nearly every cooperative commented on the high price of disposal, roughly \$250 per transformer. If the oil in the units is considered contaminated, which is PCB content of greater than 50 ppm, the units are drained and disposed of by shipping them to a reclamation facility. The oil is shipped to a PCB disposal facility. If the device has PCB content above 500 ppm, both the oil and device are shipped to a PCB disposal facility.

4. Describe for the Committee your actions to replace those transformers containing PCBs over the past ten years, the net result of those actions, and your plans for the future regarding transformers containing PCBs.

The goal of all the cooperatives is to eventually have all transformers tested and recorded assuring the entire system is PCB free. The cooperatives that have not completed testing will continue to test each transformer as it is taken down. Most cooperatives believe they have very few PCB transformers on their system at this time. One cooperative plans to test all transformers—5,500 in the next five years at a cost of \$60,000.

All the electric cooperatives are committed to maintaining the good will of their member/owners, being in compliance with applicable regulations, and being good stewards of the environment.

Thank you for your time.