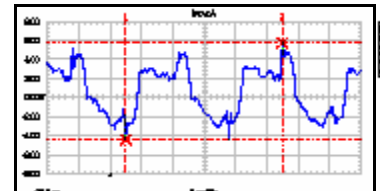


Normal AC Waveform

Legislative Alert!

Uncontrolled Electric and Magnetic Fields (EMF) in Homes, Schools, and Workplaces Cause Increased Heart Rate, High Blood Pressure, and Cardiovascular Disease in Michigan. You Can Do Something about Control of Electric Power Quality and Disease.



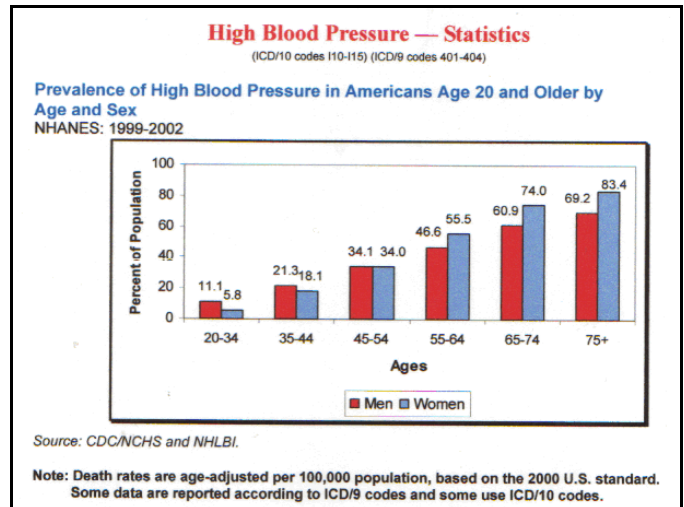
**EMF Distorted Waveform
“Dirty Electricity”**

Exposure to Electric and Magnetic Fields In East Lansing Homes -- Increased Blood Pressure, Heart Rate, and Cardiovascular Disease, “National Epidemic,” says AHA.

Chronic High Blood Pressure (HBP or hypertension) leading to cardiovascular disease has been declared “a National Epidemic” by the American Heart Association and Public Health Authorities. The number of cases increased 11.6 million (13.5 to 16% of population) from 1987 to 2001 according to Lansing State Journal. The cause for the increased number of cases of high blood pressure is not known to the American Heart Association, according to their web site.

- High blood pressure is defined as systolic pressure 140 mmHg or higher or diastolic pressure of 90 mmHg or higher, or taking antihypertensive medicine.
- About 65 million Americans age 20 and older have HBP (CDC/NCHS).
- The cause of 90-95 percent of the cases isn’t known; however HBP is easily detected and usually controllable.
- HBP was listed on death certificates as the primary cause of death of 52,602 Americans in 2003.
- HBP was listed as a primary or contributing cause of death in about 277,000 of the more than 2.4 million deaths in 2003.

The Big Three Killers are #1 Cancer, which recently edged ahead of #2 Cardiovascular Disease-HBP, and #3 Diabetes Mellitus. All Three are related to a Chronic Neuro-Endocrine Stress Syndrome that is proliferated by Chronic Exposure to Electric and Magnetic Fields (EMF), which are common environmental toxins in our high technology electronic age.



Facts about Electricity –

The voltage waveform in the upper left hand corner of this page is a smooth fundamental 60-Hertz (Hz) steady-state alternating current (AC) waveform as produced by the Utility generator. Anything that deviates from this normal sinusoidal waveform is electrical pollution – harmonics (multiples of 60 Hz), transients (spikes), sags, and swells are considered “dirty electricity.” See figure top of page 2.

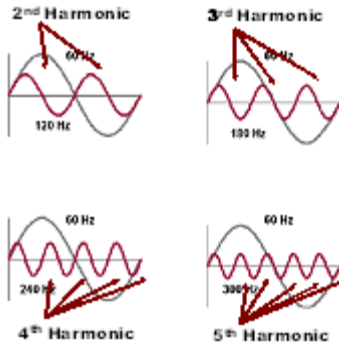
The voltage waveform in the upper right hand corner of this page is a distorted 60-Hz waveform captured from the ground wire of a cellular telephone installation in East Lansing. The switch-mode transformer used in electronic devices to change frequency and voltage takes its energy from the peak of the waveform causing it to be distorted. So, we have “dirty electricity” riding on a 60-Hz waveform. This waveform was composed of 2nd, 3rd, 4th, 5th, and 7th harmonics. Harmonics associated with 180 Hz, 300, and 420 Hz currents were significantly higher in the living areas of homes of victims of childhood leukemia in Denver, Colorado (Kuane, et al., 2002).

Harmonics

A harmonic is a frequency that is an integer (whole number) multiple (2nd, 3rd, 4th, 5th, etc.) of the 60-Hz fundamental frequency.

The fundamental frequency on power distribution lines is 60 Hz (60 cycles per second) ...

(Mazur, 6)



Milk production decreased as the number of 3rd, 5th, 7th, and 9th harmonics and as triplen harmonics increased on dairy farms in Michigan, Wisconsin, and Minnesota (Hillman et al., 2003, 2004). Triplens are odd numbered multiples of the 3rd harmonic, i.e., 3rd, 9th, 15th, 21st, etc. and must be considered toxic to biological materials as well as electrical equipment. They are known to cause heating of neutral wires, motors, and transformers and may cause fires.

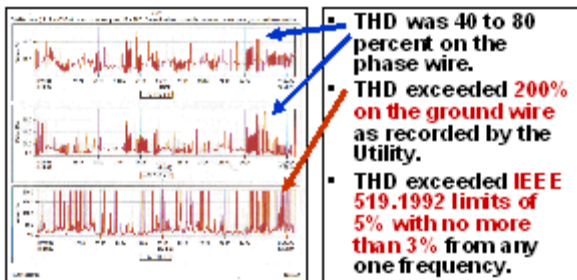
The waveform and the total harmonic distortion (THD) can be recorded by any power quality meter such as an oscilloscope that records frequencies in addition to the 60-Hz waveform. Most utilities ignore THD on their power supply and ground wires which produce EMF and health problems.

However, Lansing Board of Water and Light Engineers measured THD on the utility phase (supply) lines and the ground wire serving our home. THD was most commonly 200% on the ground wire (See Chart Below) but was also 40 to 80% on the phase wires during certain periods of the day.

Engineers also measured the flux density

Total Harmonic Distortion (THD): Measure of "Dirty Electricity"

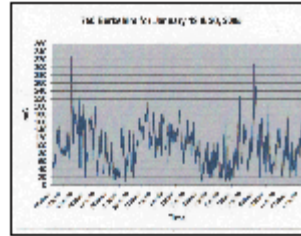
750 Berkshire Lane, E. Lansing, MI



- THD was 40 to 80 percent on the phase wire.
- THD exceeded **200%** on the ground wire as recorded by the Utility.
- THD exceeded **IEEE 519.1992 limits of 5%** with no more than **3%** from any one frequency.

(strength) of electric and magnetic fields (EMF) radiating from the ground wire and it was emitting 280 to 300 mG (milliGauss) into the air, and averaged 100 ± 39 mG for a 24-hour period. (See Chart below).

Magnetic Fields (EMF) at the Ground Wire & Water Pipe in Our Home Recorded by the Utility



- Magnetic Field averaged 97.5 ± 39.5 milliGauss for 24 hours on the ground wire and water pipe.
- Maximum was > 320 .
- Exposure of children to > 1 milliGauss increased lymphoma in Danish study (Olson, Brit. Med. J., 1993).

EMF on the living room floor above the ground wire was 20 to 50 mG. The ground wire was connected to all other circuits at the circuit breaker box and thus was radiated through the walls to outlets and appliances throughout the house.

EMF radiated from the utility ground wire above the floor was measured as milliVolts and amperes of electrical current passing through a subject's body, and caused an increase in heart rate and blood pressure on five different occasions. The subject had two coronary bypass surgeries and an abdominal aortal aneurysm prior to discovering the EMF pollution of the home.

"Dirty Electricity" was also measured in ten homes and a school in East Lansing. The EMF was removed from the ground wire at our home when a dielectric union (rubber-insulated coupling) was installed in the water pipe as an experiment. The Utility claims no obligation to correct the inferior power quality in the other homes and school because municipalities were exempted by the legislature from the authority of the Public Service Commission. However, the problem has been demonstrated throughout the State at Consumers Energy, Detroit Edison (DTE), and several electric cooperatives.

The Public Service Commission is not enforcing their regulatory power over utilities granted to them by the Legislature.

Michigan Legislature Established the Public Service Commission with Authority to Regulate Electrical Utilities

Standards established by National and International authorities were adopted in legislation that established the MPSC. The standards are commonly ignored.

Occupational Safety and Health

Administration (OSHA) – Directive CPL 2-1.18A Standards to Prevent Personal Electrical Injury have been established by the U.S. Department of Labor, (OSHA) - Effective Date: October 20, 1971.

Enforcement of the Electric Power Generation, Transmission, and Distribution Standard states “Hazardous energy means a voltage at which there is sufficient energy to cause injury. If no precautions are taken to protect employees from hazards associated with involuntary reactions from shock, a hazard is presumed to exist if the induced voltage is sufficient to pass a current of 1 milliampere (mA) through a 500 ohm resistor. The 500 ohm resistor represents the resistance of an employee. The 1 mA current is the threshold of perception for 60 Hz steady state contact current, not EMF which is not perceptible.

OSHA may not have been aware of the high energy-low voltage characteristics of electrical signals >60 Hertz, i.e., transients, harmonics, radio frequencies, microwaves, and pulsed or modulated electrical signals that occur on phase wires and are common on ground wires. For instance, < 1-Volt EMF (118 to 288 mV) induced 2.3 to 5.4 amperes (5400 mA) current through the human body in East Lansing. This concurs with power densities required to cause peripheral nerve and heart stimulation and ventricular fibrillation as described in *Applied Bioelectricity* (J. P. Reilly, 1998).

Standards for Total Harmonic Distortion (THD) – Powerline voltage and current commonly exceed IEEE *Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems* (IEEE 219-1992, Copyright© 1993). Utilities can determine THD (See Chart above) using a proper power quality test meter, but rarely do unless requested by the customer. EMF was proportional to THD and electrical “noise” in the East Lansing test home. Newly Proposed MPSC Rules would have ignored THD as a measure of power quality.

National Electric Safety Code (NESC) Handbook addresses permissible level of current in

facility “Rule92D... The word ‘objectionable is undefined in the NESC ... it is left to the designer’s discretion, utilizing good design and operating practice to identify and remedy the situation.” “...areas that are often known to present specific problems (such as milking barns without adequate voltage gradient control, pipelines, electric railways, conduits, etc.) may need special attention to limit damage to equipment or uncomfortable conditions for personnel or animals.”

From Rule 215B: “**Objections to use of the earth as part of a supply circuit are made from both safety and service standpoints.**”

EPRI Handbook (1995) Electric Power Research Institute -- In the “*Handbook for the Assessment and Management of Magnetic Fields Caused by Distribution Lines*” **EPRI states, “Furthermore proximity to distribution lines has been associated with the risk of childhood leukemia in three epidemiological studies.”** (Copies of the paper bound book can be purchased from EPRI for \$25,000 each for nonmembers).

MPSC Docket U-13934 (2004) Proposed Administrative Rules 460.2701 to R460.2707 contain no references to Power Quality Standards, although Michigan Laws that instituted the PSC claim NESC and IEEE as authority on which they are bound to operate.

Utility Deregulation is not working for the people in Michigan whose Health and Lives are at Risk! Residents should not be required to Identify a Utility Problem and Beg or Sue Utility Officials for Help.

The United States has seen many civil litigation cases pertaining to exposure to EMF and the perceived damage to health. Since 1985, school districts and parents have taken utility companies to court and sought rulings which closed off sections of schools and playgrounds as a result of an increased rate of development of cancer among children attending schools bordering power lines and transformers.

One particular case in Houston, Texas, in 1985 resulted in \$25 million in punitive damages where the judge held that the utility company showed “a calous disregard for the safety, health, and well-being of the 3,000 plus children” by locating a 345 kV transmission line through school property (EMF-Link, “EMF Legislation and Litigation,” <http://infoventures.com/emf/top/litigate.html>).

In a Wisconsin 2000 Circuit Court Case WEBCO was found negligent with respect to the maintenance and operation of its distribution system, and distributed

electricity in a manner that constituted a nuisance. The Plaintiffs were awarded \$1.2 Million. The Wisconsin Supreme Court upheld the decision.

The Plaintiffs' opening remarks in the above case made it clear that this was a "non-traditional" stray voltage (i.e., earth current) lawsuit. Michigan PSC has proposed rules that would **not** require utilities to investigate "non-traditional" stray voltage.

In East Lansing, **high frequency current** caused increased heart rate and high blood pressure, **not high voltage**. Secondly, we proved that one need not live near a high current overhead line for health to be affected, because the utilities bring the EMF into the living environment on their ground wire. Now Broadband (WiFi) is being added to Power Lines without proving that their 130 MHz signals are safe.

Overhead Electrical Wires and Communication Cables radiate toxic levels of EMF at head-height throughout Lansing, and elsewhere in Michigan.

EMF (mGauss) and Power Density was maximum 12 milliWatt/cm² about 35 meters from Cellular Phone and Water Tower [1] and decreased at the rate of 10.4 - 0.025 per meter (m) distance from the tower; 100 m = 7.9, 200 m = 5.4, 300 m = 2.9 mW/cm². EMF (mG) were similar. Power and Communication lines - - - were 2 to 25 mG (5 ft. - ht.) at various locations and hours of the day, throughout East Lansing and Lansing.



TIME To STOP The Deception – The

People of Michigan have discerned the truth and will support vigorous legislative initiatives to clean up the dirty electricity in Michigan. Humans and animals are being subjected to unnecessary mental and physical health risks. Several states have adopted higher standards for electrical power control, among those are California, Colorado, Connecticut, Georgia, Illinois, Florida, New Jersey, Oregon Washington, Wisconsin, Rhode Island, Tennessee, Texas, and Utah. New Discoveries have been published. Utilities would like to depend on outdated references. We know better, our neighbors are being affected. Utilities in Michigan have shown callous disregard for the health of residents, usability and depressing values of property right of ways, insufficient buffer zones, etc., while claiming utility rights to eminent public domain for a strictly corporate profit benefit--disregarding human and animal health, alternative routes, and protections. The chances of individual citizens winning in Court against apparently unlimited corporate \$ resources to pay outrageous attorney fees, to hire incompetent utility witnesses who have lied for a fee, and who seek grants and favors from utilities is a sad history in many Michigan Courts. Utilities have been falsely misleading opinions of the courts, but citizens can see through the sophistry, and they will support a fair, honest, and equal treatment under the law. Until the laws reflect new discoveries about effects of electric and magnetic fields on human and animal health, citizens are doomed. "You" Representatives, Senators, and Administrators of Michigan Government can cause good things to happen! You can help return Michigan to a government "of the people, by the people, and for the people."

Dr. John A. Hannah, former President of Michigan State University, frequently reminded the faculty: "The purpose of a University is to seek the truth, to teach the truth, and to preserve the truth." Recent events suggest that many university faculty and administrators are more interested in personal and political gain, and in renewing corporate grants and favors than they are in pursuing scientific facts that benefit the public. You can change that by insuring that universities have adequate funds to conduct reliable research without being coupled to utilities or other single-purpose corporate budgets.

