CPPD Health and Safety Newsletter

Date: April 1st, 2014 *Volume: #1, Issue #1*

The CPPD Health and Safety Office is located on the 1st floor of the Peterson Service Building Rooms 116 and 118. Contact John Summersett or Randall Routt

2014 Safety Committee Members

Area	Representative
Accounting	Melissa Dunlap
Renovation	Stephen Tyner-Wilson
Building Operators	Ronnie Stinnett
Heating	Aaron Marshall
Cooling	Chris Keely
Custodial Services	Elaine Greene
Grounds	Pierre Smith
Garage	Matthew Burton
Staff Assistants	Elece McMullen
Health and Safety	John Summersett
Health and Safety	Randall Routt
Trucking	Jennifer Williams
Projects Group	Pat McAlister
Services Group	Joey Cornett
	Chuck Gallagher

For information related to health and safety within CPPD please visit our web page at www.ppd.uky.edu/safety/

CPPD H&S Newsletter Info

What we hope to accomplish:

- First and foremost, to provide CPPD employees with information about working in a safe manner and environment.
- Inform all CPPD employees about the many aspects of workplace safety.
- Answer any lingering safety concerns.
- Provide recognition to employees who perform safe acts while in the workplace.
- Provide a reminder that workplace safety should always be taken into consideration at all times.
- If you have anything you want to read about that involves safety or anyone that deserves recognition, let us know.

2013 Health and Safety Award winners (Daniel Mattingly not pictured)

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Health and Safety Luncheon 2013

Below, Daniel Mattingly, Brent Finch, Ansonia Ison, and David Ingram receive Safety Awards from CPPD Director, Kevin Kriede.

The following employees have been recognized for recognition in health and safety for preventing a potential injurious health and safety condition. They were recognized in a lunch ceremony at Blazer Hall Cafeteria in December. Many were in attendance including our Director, Kevin Kreide, the Safety Committee, and other guests. If you know of any employees that bring to your attention a potential hazardous condition or prevent an injury, please inform the CPPD Health and Safety office and they can be recognized.

David Ingram

David stopped an employee from being electrocuted when the employee had started suctioning up water in to the vacuum cleaner. He pulled the plug from the wall. He possibly saved her life and water was dripping from the bottom of the vacuum cleaner by the time the supervisor arrived.

Ansonia Ison

Ansonia was cleaning in her area when she smelled gas in the hallway. She found someone who pulled the fire alarm to get everybody out of the building. Authorities came in and found a leak in one of the labs.

Brent Finch

Brent brought to the attention of a manager a safety concern he had. It was a piece of re-bar sticking up from the road directly in front of an entrance to a building. Brent indicated he had been trying for 7 years to get it corrected. A work order was issued and the problem was corrected. It was due to his persistence, that this potential hazard was eliminated.

Daniel Mattingly

Daniel was looking for a safer way to change light bulbs which hang above the rails at the Johnson Center instead of using a ladder. He found a set of 8ft roll around steps that had safety bars around the top. He got the people at the Johnson Center to purchase a set for this use. Now he can roll all the way up to the rail and go up and change the ballast and lights a lot safer with rails. Also he fabricated a box to attach to the rolling stairs to hold tools and supplies so they don't fall on someone below.

All of the job injuries and motor vehicle accidents need to be reported within 24 hours. The following is a summary of the OJI's and MVA's this year compared to the same time last year.

On the job injuries:

2013- 5
2014- 4

Motor Vehicle Accidents:

2013- 3
2014- 9

Contact Us

If you know of any employees that bring to your attention a potential hazardous condition or prevent an injury, please inform the CPPD Health and Safety office and they can be recognized. We are located on the 1st floor of the Peterson Service building and our contact info is to the left.

John's info:

257-9377

JSummers@email.uky.edu

Randall's info:

257-4144

Rlrout2@email.uky.edu

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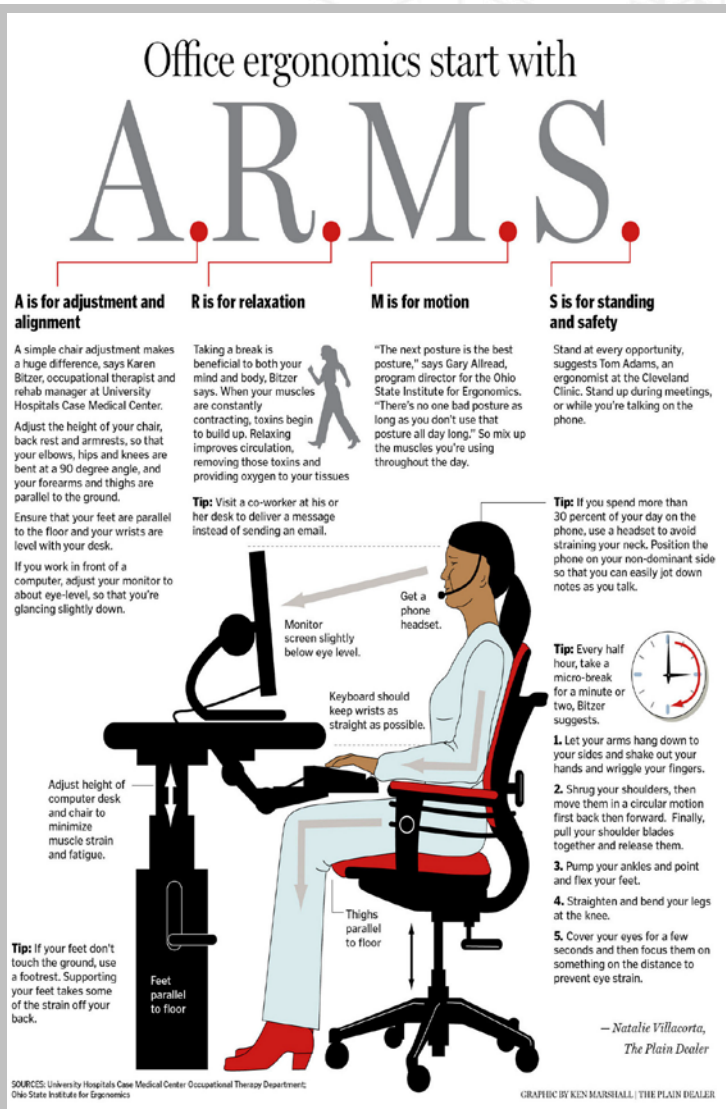
A Quick Note about Office Ergonomic Guidelines

Millions of people work with computers every day. This eTool* illustrates simple, inexpensive principles that will help you create a safe and comfortable computer workstation. There is no single “correct” posture or arrangement of components that will fit everyone. However, there are basic design goals, some of which are shown in the accompanying figure, to consider when setting up a computer workstation or performing computer-related tasks.

Consider your workstation as you read through each section and see if you can identify areas for improvement in posture, component placement, or work environment. This eTool provides suggestions to minimize or eliminate identified problems, and allows you to create your own "custom-fit" computer workstation.



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The Biological Effects of RF and Microwave Exposure and Safety Guidelines

The National Institute for Occupational Safety and Health (NIOSH) estimates that millions of American workers work with and are exposed to radio frequency radiation equipment. CWA members who are exposed to radio frequency radiation include telecommunications microwave and radio wave service technicians and outside plant technicians, operators of cathode ray tube (CRT) computers, employees who use microwave ovens at work, radio **frequency** radiation equipment operators, manufacturing workers, and health care workers who come in contact with or who operate medical diathermy equipment.

Radio frequency, i.e., microwave and radio wave radiation, is a specific component of the electromagnetic spectrum. Radio frequency radiation is in the non-ionizing portion of the spectrum. Non-ionizing radiation includes the lower frequencies in the electromagnetic spectrum such as ultraviolet and visible light, infrared, microwave and radio wave (See Table I). Electromagnetic radiation consists of vibrating electric and magnetic energy or fields moving through space. For example, electric current in a transmitter circuit establishes electric and magnetic fields in the region around it. As the electric current moves back and forth, the fields continue to build up and collapse, forming electromagnetic radiation. This electromagnetic radiation is characterized in terms of the wavelength and the frequency of vibration.

Microwave and radio wave radiation may be categorized as continuous waves (e.g., communications equipment), intermittent (microwave ovens, medical diathermy equipment, and radio frequency equipment), or pulsed mode (radar systems). Microwave and radio frequency radiation may be transmitted, reflected, or absorbed upon striking an object.

When measuring radio frequency radiation emissions, the power of the source should be measured by the intensity of the field. Intensity should be measured in terms of power density. Power density is the amount of energy carried by radio frequency, i.e., microwave and radio wave, radiation as it proceeds each second through a square measure of space. The energy carried by microwave and radio wave radiation is expressed in terms of milliwatts per square centimeter (mW/cm (2) = 1/1,000 of a watt) or microwatts per square centimeter (uW/cm (2) = 1/1,000 of a milliwatt).

Health Effects

The various types of radiation affect the human body in different ways. For example, ionizing radiation, that contains a tremendous amount of energy and penetrating power, will cause changes in the body's molecular system. On the other hand, as noted, non-ionizing radiation operates at much lower frequencies and is not believed to be as harmful to the human body as ionizing radiation. The type of radiation to which affected CWA members are most often exposed is non-ionizing radiation, e.g., radio frequency, i.e., microwave and radio wave, radiation.

It is known, however, that exposure to non-ionizing radio frequency radiation may produce serious biological effects. As high frequency radio frequency radiation, i.e., microwave radiation, penetrates the body, the exposed molecules move about and collide with one another causing friction and, thus, heat. This is known as the thermal effect. If the radiation is powerful enough, the tissue or skin will be heated or burned. Such health effects may or may not be reversible, depending on the particular tissue or organ that is exposed, the intensity of the radiation, the frequency and duration of the exposure, the environmental temperature and humidity, and the body's efficiency in dissipating the heat.

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At the present time, there is substantial scientific data that establishes negative health effects associated with microwave radiation. For example, it has been demonstrated that microwave radiation may cause eye and testicular damage. These organs are highly vulnerable to radiation damage because they contain few blood vessels. Therefore, they are unable to circulate blood and dissipate the heat from radiation as effectively as other organs.

An additional health concern involves damage to the eyes. For example, several scientific investigations have shown that cataracts among humans and laboratory animals have occurred as a result of the intense heating of high frequency microwave radiation. Such data has revealed that a particularly important determinant in the causation of microwave radiation-induced cataracts is the time intervals between exposures, i.e., increased time intervals between exposures is thought to allow the body's repair or defense mechanism more opportunity to limit ocular lens damage.

As noted, microwave radiation may also cause damage to the male testes/reproductive organs. Specifically, scientists have demonstrated that exposure to microwave radiation may result in partial or permanent sterility. In addition, some scientific evidence suggests similar effects associated with microwave exposure and female reproductive problems. Furthermore, the scientific literature indicates a relationship between exposure to microwave radiation and birth defects, such as mongolism (Down's Syndrome) and central nervous system damage.

Exposure to radio wave radiation may result in a non-thermal reaction that causes similar molecular interactions as in the thermal effect, but without the heating of the exposed tissue or organ. The site of energy absorption varies with the frequency, that is, exposure to low frequency non-ionizing radio frequency radiation will (theoretically) penetrate the skin and cause molecular interactions similar to those caused by high frequency radio frequency radiation. Complicating such non-thermal reaction, the body's heat and warning system may not provide protection because the energy is absorbed at locations below the nerves.

Clearly, a review of the medical and scientific literature indicates a tremendous need for more scientific research. Such research should focus upon the effects of microwave and radio wave radiation upon humans. Particular emphasis needs to be directed at exposure to long-term, low-level biological effects of microwave and radio wave radiation. Such research is particularly important in order that the issue of exposure to potentially harmful microwave and radio wave radiation emissions from microwave and radio wave transmitters and human health effects might be more adequately determined. Another health concern regarding work with radiofrequency equipment is potential electrical shock. This may occur when, under abnormal conditions, the operator is standing in water and comes into contact with a high-frequency generator circuit.

A final concern is associated with the use of cell phones and related equipment. Regarding cell phones, millions upon millions of U.S. workers, consumers, and family members (including children) spend a significant amount of time using/talking on their cell phones. Such use of cell phone equipment may result in excessive exposure to radio frequency radiation. If such exposure is significant (based upon the duration or length of time one uses the cell

phone, the placement of the cell phone relative to the user's ear, i.e., against or within close proximity to or away from the user's ear, and the amount of radiofrequency radiation emitted by the cell phone), serious health effects may occur. For example, scientific and medical data has demonstrated individuals who use cell phones continuously throughout the (work) day and place the phone directly against their ear have developed related brain tumors. Scientific theory suggests related excessive radiofrequency radiation emissions bombard/penetrate the blood/brain barrier resulting in the growth of brain tumors. As a result of these findings, cell phone users should utilize hands-free equipment rather than holding the cell phone directly against their ear/head. Cellular telecommunications technicians face an additional concern. During the performance of their work on cellular antenna or related equipment, they may come into close proximity with radio frequency emissions. In turn, over time, continuous and repeated exposure may result in serious health problems. Ideally, such work should only be conducted when employers demonstrate harmful equipment radio frequency emissions will not occur/are controlled. Controlling the Hazard

Employers must ensure that potentially exposed microwave and radio wave radiation workers have a safe and healthful workplace. This means that employers should implement engineering controls to minimize or eliminate potential exposure, conduct comprehensive training about the potentially hazardous working conditions, and institute medical surveillance programs.

The most effective way to eliminate and/or minimize occupational exposure to radio frequency microwave and radio wave radiation is through the use of engineering controls. For example, the source of the potential problem, i.e., the radiation-emitting equipment, should be enclosed or effectively shielded or the worker should be separated from the source. This requirement is equally important to all workers exposed to microwave and radio wave radiation. Where engineering controls cannot be implemented, personal protective equipment such as protective clothing and eyewear should be provided and utilized.

In addition, employers should provide comprehensive training regarding potentially hazardous working conditions. Such a program might consist of written and/or audio/visual materials that detail potential safety and health dangers, health effects of exposure, methods of control, first aid procedures, the use of hazard warning signs and labels, and the identification of restricted areas.

Employers should also institute medical surveillance programs that provide workers with routine medical examinations specific to any physiological/biological effects resulting from occupational radio frequency radiation exposures. Potential benefits of medical surveillance would include: an assessment of an employee's physical fitness to safely perform the work (consisting of a medical and occupational history as well as a physical examination), biological monitoring of exposure to a particular agent, and early detection of any biological damages or effects. In addition, documented health effects would allow the worker and her/his physician to make informed judgments about further exposures.