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PFMA CONNECTION

The Resource for Plant and Facilities Maintenance Professionals www.pfmainc.com

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August 2002





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inside **PFMA** Connection

PRESIDENT'S MESSAGE CENTRAL WISCONSIN CHAPTER

James L. Lang

It is an honor to bring you this message in the debut issue of "PFMA Connection". Congratulations to all those responsible.

As with the "PFMA Connection" a lot of work has grown the Central Wisconsin Chapter into a viable part of PFMA Inc. Since the chapter started in October of 2001, the membership has reached fifty and still growing. In April, a vendor show was held in Stevens Point with very good vendor participation. The 2003 show is scheduled for May 13th. The chapter has a challenge to at least double attendance at the show.

June's activity was the first annual vendor golf outing (Tom Ticknor, chairman) held at the Ridges in Wisconsin Rapids. Twenty-five vendor sponsored teams made for an enjoyable outing. Our thanks go out to those vendors sponsoring one or more teams. In July, a picnic was held in Plover to thank all of the show workers, and recruit new members. You have not been to a picnic until you have had fruit or berry cobblers made by Dick and Frank. Fellowship as usual was great.

Contact has been made with both Technical Colleges, Mid-State and North Central, on two fronts. First was to notify both scholarship foundations that a donation in the amount of \$2000.00 will be sent to each foundation. Second, meetings will be set up with each school to seek help answering the question of what or how can PFMA work with the schools to better promote our goal of a better maintenance worker. Dick Zagrzebski, chairman, and Earl Baeten will be working on this and are looking for more members of the education committee.

"WHEA" (Wisconsin Healthcare Engineers Association) has been contacted to see if PFMA could be of some help in providing seminars to their maintenance people. In our first meeting, we were given a wish list of topics that PFMA has the expertise to put on these seminars. We are attempting to be put onto their approved list of seminar providers.

September will start the fall portion of year. A board meeting will be held on Monday, August 26th at the Central Wisconsin Airport. Board meetings are schedule for the last Monday of each month and are open to the general membership. The first regular membership meeting will be held on September 10th. Place and time for this meeting has not been confirmed at this writing. Notification will be sent out for each regular meeting scheduled on the second Tuesday of each month.

Membership is a very important part of PFMA. The Central Wisconsin Chapter is currently looking to increase its membership base. If you are interested in helping us achieve our goals, please contact the PFMA website www.pfmainc.com or contact PFMA Inc. of Central Wisconsin, 2504 Wood Road, Mosinee, Wisconsin 54455 or call 715-359-5682

Table of Contents President's Message

PRESIDENT'S MESSAGE MILWAUKEE AREA CHAPTER

Kenneth Kieck

As the PFMA completes its first year, we can be proud of our accomplishments. Not only are we an organization that is financially secure; we are a professional organization dedicated to providing value and serving our members.

This is something we cannot forget as we grow as an organization and continue to add chapters. The purpose of the PFMA is to provide members a venue to exchange information and share emerging trends in both plant and facility maintenance practices.

Our goal is to provide meaningful educational opportunities and enhance the skills and careers of our members. If successful, we will continue to grow. If not, our members will find other outlets to satisfy their needs. During our inaugural year, many of our members participated in a maintenance specific tour at the Milwaukee Brewers Miller Park stadium. In addition, the first annual PFMA trade show provided our members and guests the opportunity to meet with industry experts to help resolve maintenance issues, improve operations, and save energy.

Maintenance has changed over the years introducing computerize maintenance management systems and moving from work practices based on preventive tasks to a proactive predictive culture. With our current economic conditions, industry and business is discovering that maintenance can contribute to the bottom line by reducing operational costs and improving productivity. I believe you will find the PFMA at the forefront in advancing industry and managerial innovations.

Our officers are looking forward to this fall and resuming the monthly membership programs and activities. We have been fortunate in having a dedicated group of individuals step up and take on leadership roles in the organization. On a sad note, I would like to mention the passing of Don Van Caster, PMFA Haberdasher. His contributions to the start-up of the PFMA and his leadership during our first year will be missed. I look forward to seeing you in the fall.

CHAIRMAN'S MESSAGE MARSHLAND CHAPTER

Doug Prunty

What does one say about starting a Maintenance Organization again. This may seem like an unusual way to open a Chairman message, but I was asked, "Why go through this again?" My answer is "....because I believe that there is so much that we can learn from one another. The Maintenance field keeps changing with advanced computers, higher technology, new and improved equipment, and there is more responsibility put on the Maintenance worker every day. We now have an organization where one can share problems and suggestions."

PFMA

PFMA Connection

Editor..... Mike Klaus Sales Manager.... Stefanie Dow

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Madison 2002 Plant Engineering & Maintenance Expo



Make plans to attend the Plant Engineering and Maintenance Expo

Monday, September 23, 2002 Show Hours: 9:30 a.m. - 5:00 p.m.

Here is your opportunity to consider a wide variety of industrial products and services that will help your company stay ahead of the competition in today's ever-changing marketplace.

Directions to the Expo: Highway 12/18, Greenway exit; left on John Q. Hammons Drive
Marriott Madison West
1313 John Q. Hammons Drive, Middleton, WI 53562

Attending the PFMA Madison Expo will:

- Update you on new products offering solutions to your plant engineering, facilities and plant maintenance challenges.
- Introduce you to a wide variety of vendors that can offer your company the competitive edge
- Provide you with great networking opportunities for future business relationships
- Over 100 booths
- Free admission with the attached pre-registration card
- Free parking
- Pre-register to attend now! See the perforated pre-registration card inside this brochure.
- We invite you to bring others from your company! For multiple registrations, attach copies of this card for each additional attendee/
- Or pre-register each attendee at our website: www.pfmainc.com.

Electrical Seminar

- The IBC (International Building Code) has special requirements for electrical installations in buildings and the 2002 NEC (National Electrical Code) has over 500 changes for this code cycle.
- Attend this seminar and learn some of the significant changes that will affect electrical installations we are involved in.
- Presented by renowned speaker Joe Hertel, Program Manager, State of Wisconsin Dept. of Commerce
- By attending this seminar you will earn CEU's for re-certification and receive a certificate of attendance from PFMA.

Date: September 23, 2002

Place: Marriott Madison West, Middleton, WI

Time: 9:30 a.m. - 11:30 a.m. and 1:00 p.m. - 3:00 p.m. (4 hours total for both sessions)

Cost: \$20.00 for each 2 hour session (\$40.00 for both sessions)

Light refreshments are included.

You can register for these seminars by sending your name, address, e-mail, phone and fax numbers along with you check made payable to PFMA.

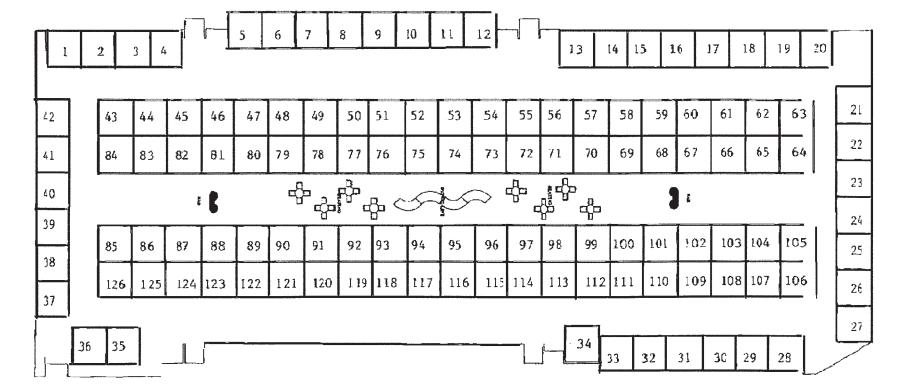
Please indicate which session you are attending (morning, afternoon or both).

Mail to: PFMA, 5105 Scott Lane, West Bend, WI 53095

For more information contact Ted Kucharski 262-594-5118

Booth space still available! Contact Stefanie Dow at: Phone: 262-695-5725

Fax: 262-695-7518 Email: dow@execpc.com



Madison 2002

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Pre-Registration Card

To pre-register, complete this card and mail, fax or email as listed below. Or visit our website for online registration: www.pfmainc.com.

Pre-registration name badges received through September 10, 2002 will be to you for free admission. After this date, pre-registered name badges will be waiting at PFMA.

Registration on Monday, September 23, 2002 at the

Marriott Madison West.	F.00	
Show hours: 9:30 a.m. – Free Admission with this	•	
Tree Admission with this	cui d.	
Name		
Company Name		
Address		
City State	Zip	
Phone		
Fax		
Email		
Indicate your Job Function	on:	
Electrician	Manager	☐ Safety
Engineering (Plant)	Owner/Preside	nt Sales
Engineering (Other)	Production	Other
Maintenance (Supervisor	Purchasing	
Maintenance (Trades)	☐ Quality	
Email: kklaus@execpc.co	<u>m</u>	www.pfmainc.com
Phone: 262-644-6287		Fax: 920-261-183

Or Mail to: PFMA, 5105 Scott Lane, West Bend, WI 53095

Chapter News

Milwaukee Area Chapter (MAC)

The first annual PFMA MAC Golf Outing was held on June 13, 2002 at Silver Spring Country Club, Menomonee Falls, WI. All who attended considered it a success.

There were 122 golfers scattered around Silver Spring's very green course. The day was warm and for the most part sunny. Mike Sydor's group of volunteers were put to work. Mary Parker-Witte's crew handled registration while Janice Dunbar, Ken Kieck and Mike Schlicht ran the putting contest. There were a total of (5) \$1000 prizes putted for, but alas, no winners. The winning foursome of the outing was lead by Bob Ferron. After dinner the fabulous "Auction Raffle" was run by Tom Schroeder who did a magnificent job, with the help of Janice Dunbar who handled the sale of the tickets. The winner of the golf clubs was our old friend Jim Strehlow. Thanks to all volunteers!

Marshland Chapter

On March 19, 2002 several Maintenance and Vendor Associates got together to form a Steering Committee to start a PFMA Chapter in the Fond du Lac area. The Committee appointed Doug Prunty as Chairman, Bill Wojahn as Treasurer, and Jeff Zwicky as Secretary.

A kick-off meeting was planned for April 17 at the Holiday Inn in Fond du Lac. There was a small turn out but all who attended had a positive attitude towards the Maintenance Organization in the area. At this meeting we announced the name of the Plant & Facility Maintenance Association Fond du Lac Chapter Area. Another meeting took place in May when the Arbon Equipment Corporation showed a program on loading dock safety. On June 21 the organization had a golf outing at the Mayville Country Club. We had 8 holes sponsored and a total of 40 golfers. All had a good time.

Membership keeps coming in and we are now over 20 members. Our next membership drive will be in September 25 with the location to be determined. Our expectation is to have over 100 members within 2 years.

PFMA Connection Article and Photo Submissions

Gain greater recognition for your company's expertise in the marketplace.

Submit an article and/or photo for publication! PFMA Connection is looking for articles and photos for publication within opcoming issues. This is an excellent opportunity to showcase. your objective knowledge of plant and facilities maintenance related topics while surning valuable publicity for your company. Content ideas can include (but are not limited to): -Highlights of an industry trend -Technical product applications Pending legislation and its impact on the field of maintenance Opinion column on an industrial topic -Problem Solving Trouble-shooting ideas Guidelines: Articles should be of an objective nature, minimum 250 words, maximum 500 words. Please submit your articles on disk or e-mail for the editor's consideration to: Stefanie Dow dow@execpc.com

Or mail to: PFMA, 5105 Scott Lane, West Bend, WI 53095

Questions?

Contact Stefanie Dow, phone: 262-695-7479, fax: 262-695-7518,

Visit our website: www.pfmainc.com

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Calendar of Upcoming Events

August

No Membership Committee - Have a nice summer.

8/27/02 Operating Committee,

5:30 PM at Legacy Fine Dining, New Berlin

September

9/17/02 Tour of the Milwaukee Water Works- Linwood Water

Treatment Plant, 3000 N. Lincoln Memorial Drive,

4:00 p.m. Cost: \$15.00. Membership

Meeting to follow at the Bavarian Inn on 7th and

Lexington, 6:00 pm.

9/18/02 Northeast Wisconsin Maintenance,

Engineering & Purchasing Expo

Sponsored by Great Lakes Maintenance Association

(GLMA)

Valley Fair Mall, Appleton, Wisconsin,

10:00 AM - 5:00 PM

9/23/02 Plant Engineering & Maintenance Expo,

Sponsored by PFMA Capitol Chapter Marriott Madison West, Middleton, WI,

9:30 AM- 5:00 PM

9/24/02 Operating Committee,

5:30 PM at Legacy Fine Dining, New Berlin

October

10/15/02 Membership meeting,

5:30 PM at Legacy Fine Dining, New Berlin

10/29/02 Operating Committee,

5:30 PM at Legacy Fine Dining, New Berlin

November

11/19/02 Behind the Scenes Tour of Miller Brewery.

Meet at the brewery at 4:00 pm on State Street.

Dininer and Membership Meeting to follow at Miller,

6:00 pm.

11/26/02 Operating Committee,

5:30 PM at Legacy Fine Dining, New Berlin

December

12/17/02 Holiday Party for PFMA members and their families,

5:30 PM at Legacy Fine Dining, New Berlin. Dinner at 6:00 pm.

Happy Holidays from the Officers and Staff of PFMA!

Note: Dates are subject to Change. Generally, the PFMA MAC monthly membership meetings are held on the third Tuesday of the month and the board meetings on the last Tuesday of the month. Please visit our website www.pfmainc.com for the latest updates.

To add items to the Calendar of Events for future issues, contact Stefanie Dow phone: 262-695-7479

fax: 262-695-7518 e-mail: dow@execpc.com.





Calendar of Expositions

Make plans to exhibit and attend

September 18, 2002

Northeast Wisconsin Maintenance, Engineering & Purchasing Expo Sponsored by Great Lakes Maintenance Association (GLMA) Wednesday, 10:00 AM- 5:00 PM Valley Fair Mall, Appleton, WI

September 23, 2002

Plant Engineering & Maintenance Expo Sponsored by PFMA Capitol Chapter Monday, 9:30 AM- 5:00 PM Marriott Madison West, Middleton, WI

April 2 & 3, 2003

Plant Engineering & Maintenance Expo Sponsored by PFMA Milwaukee Area Chapter Wednesday & Thursday, 11:00 AM - 7:00 PM each day Wisconsin State Fair Park, West Allis, WI New Facility!

May 13, 2003

Plant Engineering & Maintenance Expo Sponsored By PFMA Inc. of Central WI Tuesday, 9:30 AM - 5:00 PM Holiday Inn and Exposition Center Center Stevens Point, WI

To confirm booth space in any or all of these expos, contact Stefanie Dow at phone: 262-695-7479, fax: 262-695-7518, e-mail: dow@execpc.com

To pre-register to attend any of these shows, visit our website: www.pfmainc.com.

5105 Scott Lane West Bend, WI 53095

Visit our Website:

www.pfmainc.com

Membership Application



Print Name on Card:

Signature:

Membership Application*

The PFMA is a non-profit organization born to foster an exchange of information among maintenance professionals and provide technical information on emerging trends in plant and facility operations. A goal of the PFMA is to provide premier resource training, education, and other professional development skills that contribute to the ongoing success of a member's career or occupation.

Plant & Facilities Maintenance Association, Inc. 5105 Scott Lane, West Bend, WI 53095 Phone: 262-644-6287 Fax: 262-644-6528

*PFMA Inc. membership committee must approve all applications

Membership Type (Check on	<u>e)</u>	Membership Description
In-Plant/Regular Membership Annual Dues: \$50.00/U.S. Funds	- · ·	eer or occupation is directly involved in plant or facilities maintenand supervisor, engineer, or accredited craftsperson.
Academic Membership Annual Dues: \$40.00/U.S. Funds	_ · ·	eer or occupation is directly involved in the education and/or training ssional or craftsperson.
Vendor/Affiliate Membership Annual Dues: \$60.00/U.S. Funds		eer or occupation supports a plant or facility maintenance function, su sulting.
Mr. Ms. First Name	MI Last Name _	
City:		State: Zip Code:
Phone Number:	Fax Number:	Email:
Phone Number:	Fax Number:	Email:
Check or Money Order MasterCard Visa Ex	pires: /	Send this form and mail with payment to PFMA, Inc.

Date:

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Industry Articles

Asthma, Allergies, and Mold, Oh My!

Protect your family, home, and work environments with non-chemical purification systems.

Allergies and asthma, especially in children, are rising, why? Some people get sick just from going to work or to school, what is causing this distress? In many cases, these people are victims of environmental contaminants, such as mold, bacteria, chemicals and particles. Unfortunately, these "Environmental Factors" are affecting more and more people due to their proliferation in our environments. In this article, we will discuss these contaminants, their sources, and some technologies you can utilize to substantially reduce or eliminate these harmful contaminants from your environments.

Indoor air quality or IAQ is a growing area of interest due to people's desire to breathe healthy, fresh air indoors or out. We know air contains standard amounts of oxygen, carbon dioxide, nitrogen and other elements necessary to support life, but it is the absence of contaminants and a balance of negative and positive ions that truly defines "fresh" air. (lons are charged molecules created by mechanical action of wind, waves, etc., or electromagnetic/electrical sources such as the sun's rays or lightning.) The science of IAQ has identified three general categories of contami-

The Smart Alternative: Breakdown Prevention

By Mark A. Whitaker, Zien, Inc. Mechanical Contractors Since 1919

The smart alternative to breakdown service is breakdown prevention. In today's environment of escalating energy, capital equipment and man hour costs, it's essential to achieve optimal utilization of these resources. Regular scheduled maintenance keeps mechanical equipment in top operating condition, prolongs equipment life expectancy and helps reduce costly utility bills. Clean coils, properly adjusted belts, lubricated bearings, clean filters, smooth firing burners, exhaust fans, pumps and a host of components make up a well balanced and economical heating, cooling, refrigeration and ventilation system.

Reduce the chance of crippling breakdowns. Winter or summer, heating or air conditioning breakdowns can cost heavily in lost business and productivity. Discomfort distracts people, incurs resentment and increases absenteeism. Manufacturing processes and tolerances may be affected by

heat and humidity. Good air conditioning keeps people on an even keel throughout your facility. Scheduled maintenance is your best assurance that the environment is right for your business, year round.

You'll save energy. Regular scheduled maintenance keeps your mechanical equipment in top operating condition and helps reduce power and fuel consumption.

You'll prolong equipment life expectancy. Waiting for equipment to break down can be expensive. By the time you get to the breakdown, your equipment life may already be shortened. Air conditioning compressors labor harder against dirty filters and blocked air passages through restricted coils. Fan motors and pump bearings with little or no oil or lubricant can lead to costly replacement parts. Get the most out of your equipment by safeguarding it with a preventive maintenance agreement.





Industry Articles

Continued from page 8

nants; Microbiological Organisms, Chemicals (or gas-phase odors), and Particulates. Each of these general categories has a myriad of individual contaminant possibilities.

Microbiological organisms, in the form of mold, yeast, bacteria and viruses are a leading cause of sick buildings and building related illnesses according to the World Health Organization. In modern air conditioning systems, the air conditioning coils used to cool and dehumidify the air grow mold on huge surface areas inside the HVAC system. When these coils are new, they are bright and shiny aluminum. After just a few years they turn dull, gray and black as they grow layers of biofilms (mold, yeast, etc) on them, not unlike the biofilms on your teeth in the morning. These biofilms not only impede heat transfer and airflow, they are a source of mold, yeast and bacteria to the building. As these biofilms grow on the large coil areas in the middle of the airstream, they disseminate particles, spores, and microbial VOCs (chemical odors) into the air as contaminants. They literally seed the building and ducts with mold, they penalize AC system efficiency, and they give off allergenic, and in some cases, toxigenic chemicals to the breathing zone. It is no wonder people are getting sick. The best way to handle this mold problem is not with pressure washers and chemicals but by shining very high output UVC (ultra-violet energy in the C-band; 200-280 nm photons) on these coils. Irradiation of the AC coil kills and breaks down the layers of mold that have built up deep inside the fins of the coil. UVC continuously disinfects the air as it passes through the irradiated zone while breaking down the harmful organic chemical odors. UVC has been in use for 50+ years in water treatment and infectious disease (TB) applications. With advances in technology, a new generation of very high output UVC Emitters is now available for air and coil disinfection in HVAC systems. If you are not sure you have mold in your AC system, look at the clear plastic condensate water drain line off the AC coil of your furnace. If it is mostly black, slimy and disgusting looking, this is mold mycelium and a direct indication of mold and microbiologicals in the AC system.

Chemicals, usually referred to as odors, are lighter than air and diffuse into the air creating a gas-phase or vapor contaminant. Many chemicals are identified by their smell, i.e. banana, onion, body odors and mold, to name a few. Chemicals are divided into two categories, organic and inorganic. In industrial IAQ the inorganic chemicals have elemental components, such as sulfur or chlorine that must be removed with a chemical filter utilizing activated carbons or permanganates. Organic chemicals known as VOCs (volatile organic chemicals) are a major concern in residential and commercial IAQ as they are prolific and problematic at very low levels. VOCs off-gas from carpets, glues and numerous other sources in very low parts per million and parts per billion levels.

Unfortunately, in a bid to increase energy efficiency, tight building construction traps these low-level chemicals in the buildings we occupy. Outside air is used to dilute and ventilate these buildings, but sometimes it is not enough to alleviate the chemical odors present. Another, relatively unknown, source of organic chemicals indoors is the products of respiration of mold and microbials that grow in HVAC systems. Additionally, cleaning agents, body odors, food/cooking and other processes also contribute to the level of chemical contaminants in indoor air. In addition to ventilation, newer technologies such as ionization, ozone and ultra-violet UVC energy are used to disassociate and breakdown these chemicals. Ozone gives up an oxygen atom to create a chemical change in the chemical odor it interacts with through the process of oxidation. OSHA and other regulatory and industry groups have identified ozone as an air contaminant at elevated levels. Therefore, it should be used at very low levels or in an unoccupied space. A better solution to reduce low-level airborne chemicals is the use of very high output UVC to break apart organic odors through irradiation. Irradiation splits the organic carbon - hydrogen - oxygen bonds causing odors to breakdown to the more stable molecules of CO2, H2O, O2, etc, thereby eliminating the offensive chemical odors. Very high output UVC Emitter systems are very effective at reducing offensive organic odors within the HVAC system and conditioned space.

Particles: If you have ever seen large numbers of particles floating in a sunbeam, they are proof of the particulate load in indoor air. The vast majority of these particles are skin cells, of which humans shed about a million every minute, dust mites, insects, smoke, other dusts, etc. The particles we see are a small percentage of the total load as most particulate in indoor air is too small to see with the human eye. Examples are dust mite and insect excrement, ultra-fine dusts, pollen, mold spores, mold particles, and on and on. Increasing the efficiency of filters in your HVAC system may help reduce the amount of respirable particles (those which you inhale through normal breathing) in the air. Because higher efficiency barrier filters require more work (motor horsepower) to deliver the air, be careful to balance the removal efficiency of the filters with the particle size and the amount of air required for the equipment to operate properly. Electronic filters are a type of very efficient filters that use an electric field to ionize (charge) the particles, while another oppositely charged section collects the dust electrostatically. These units require higher maintenance because they must be cleaned often to maintain their high removal efficiencies. Ionization field systems can also be effective on certain particulate contaminants, but they are often dismissed as experimental or misunderstood. Always use a reputable HVAC contractor when upgrading to high efficiency filtration. Contact an air quality expert for more information on these technologies or go to www.airwater.com on the World Wide Web.

Airborne contaminants are diverse and prolific causing many environmental health issues for people. Fortunately, technology offers some excellent Natural remedies that are effective, efficient and affordable.

John Menz, President of Air & Water Technology, Inc of Middleton, Wisconsin specializes in non-chemical solutions to common air and water contamination issues. John has been in Commercial, Industrial and Residential HVAC for over 18 years. John can be reached at airwaterman@airwater.com or call 608-831-3033.



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Industry Articles

Vibration Problems

by: Paul E. Feuerstein, PE

Operating machinery installed on or within a structural system (steel structure, foundation and soil, and they are all built that way) will emit vibrations which can be tolerable or highly troublesome to the human psyche and the system itself. The difference is in the design.

Simply stated, the natural frequency of the support structure must not coincide with the frequency of the operating machinery. If they do converge or are close, the results can damage the machine, structure, and your maintenance budget.

A solution: Change the speed of the machinery or the stiffness and/or mass of the structure; that's all it takes, but what and how, by how much? It's complex.

Haberdashery

Wear your PFMA pride on your sleeve! Purchase your PFMA clothing items now

PFMA polo shirts and blue denim shirts are on sale through haberdasher Bob Salentine, PFMA member.

Order yours now! Call Bob at 262-798-5000.

We will also have an inventory of these items for sale at all PFMA membership meetings, trade shows and special events.

We accept cash, check, MasterCard and Visa.

Bucket Elevator

The maintenance crew would not ascend a 175-foot bucket elevator while operating. Too much movement. A computer study revealed the natural frequency of the elevator to be 3.4 Hz, operating frequency 3.1 Hz. The proximity of these two frequencies resulted in an amplification of the vibration, good reason for not ascending the elevator. This condition results in metal fatigue and failure. The elevator was found to be cracking as predicted and consequently dismantled and replaced.

Sea Wall

A sea wall in the intake water crib of a nuclear power plant became a high maintenance issue shortly after installation. The wall was redesigned to accommodate the undulating load of the lake. The redesign eliminated stress risers and kept the operating stresses below the endurance limit of the steel. At low stress levels, the redesigned wall is maintenance free and has an undetermined life.

Rooftop Chiller

The entire three-story robust reinforced concrete building was plagued by a light insidious vibration. A new chiller, which was set on the roof, created the problem and complaints. This problem was corrected by suspending the chiller on two beams above the roof, thus transferring the mass (chiller weight) to four building columns. Result, no more complaints or cracked coils. The compressors operate at 30 Hz.

Rock Crushing

Unsafe structure is only six weeks old, but over half a million dollars and extremely high maintenance. An aggregate plant, jaw crusher (4 Hz) and feeder (16 Hz) on a steel support structure above concrete foundation. Obviously not designed as a vibrating system, but rather as individual parts of a static structure. Symptoms: Paint flaked, bolts failed, welds cracked and improperly rewelded. This system was rightly taken out of service.





2003 PFMA Products & Services Directory



PFMA is proud to introduce:

2003 PFMA Products & Services Directory

A Buyer's Guide for Plant and Facilities Maintenance Professionals Featured in the November, 2002 issue, PFMA Connection

Listing Submission Deadline: September 15, 2002

Advertising Space Reservation Deadline: October 15, 2002

The Products & Services Directory is a special feature to the November 2002 issue of PFMA Connection, the official publication of the PFMA. This buyer's guide will be a convenient resource for readers to refer to throughout the year to assist them in making purchasing decisions. This directory will also be posted at the PFMA website year-round: www.pfmainc.com.

- Each PFMA member will receive (1) free listing under a standard category heading*.
- Each advertiser in this issue will receive (1) free listing under a standard category heading.
- 5x contract advertisers will receive their logo above their listing at no charge.
- 5x contract advertisers will receive a link at the PFMA website at no charge

Additional listings can be purchased for \$125/listing, under the categories of your choice.

Please attach additional completed copies of this form for each listing purchased along with full payment**.

*Standard Listing Categories for the 2003 PFMA Products & Services Directory:

Asphalt Paving Contractors Absorbents Advertising Specialties **Aerial Work Platforms** Air Cleaning & Purifying **Automated Systems/Parts Bathroom Supplies Batteries Bearings Belts Blower Systems Boilers Bolting Building Contractors Building Maintenance** Cable Calibration Sales & Repair

Casters & Glides

Chemicals
Cleaning/Industrial
Clothing/Uniforms
Coatings
Communications Equipment
Compressors
Computer Services
Construction Equipment
Construction Management
Consultants
Controls
Cooling Towers
Cranes

Degreasing Agents Displays Doors Dust Collection Education Electrical Contractors
Electrical Equipment/Supplies
Electronic Components
Electronic Field Services
Elevators
Employment Services
Engineering Services
Environmental Compliance
Epoxy/Coatings
Equipment Rentals
Fabrication & Assembly
Fasteners
Fences

Fire Protection
First Aid Supplies
Floor Coating & Maintenance
Fuels

Filtration Systems/Equipment

Generators Hardware **Heat Exchangers** Hoists/Parts/Repair **HVAC Contractors Hydraulics/Pneumatics** Industrial Supplies **Landscape Contractors** Lift Trucks Lighting Lubricants **Machine Tools** Maintenance Services Maintenance Supplies Material Handling System Mats/Towels Metal Finishing **Metal Products**

Motors/Gear motors Packing/Shipping Supplies Piping/Tubing **Plastics Plumbing Contractors Pumps** Recycling **Roofing Contractors** Safety Products **Security Services Tanks Test Equipment Valves** Vibration Analysis **Water Treatment Services Welding Services** Wireless Communications

Motor Repair/Rebuilding

Please return listing response form(s) to:
PFMA, 5105 Scott Lane, West Bend, WI 53095.
Or fax to Stefanie Dow at Fax: 262-695-7518.
Listing Response Form (Please print or type):

ading:

City: State: Zip Code: Phone Number: Fax Number: Website & E-mail address: 80 word description of your product or service:	Address:		
Website & E-mail address:			-
30 word description of your product or service:			
	30 word description of your pro	oduct or service:	

2003 PFMA Products & Services Directory Sample Listing*

*Logo is complimentary for 5x contract advertisers; Option to add a logo to a listing for +\$125.

	Lift Trucks
YES	nle quipment & ervices, Inc.
W1308	ipment & Services Inc. V4901 Campbell Dr., alla, WI 53051. Ph. 262-783- 7510
Full service Parts for all equipment line facility or our	5-7995. www.yeslifts.com. ct: Jerry Janiszewski re equipment distributor. lift truck makes and other es. Service available at your s. New and used equipment. s. financing, training.

^{**}For additional paid listings, please enclose your check payable to PFMA or list your MasterCard or Visa card number, expiration date and cardholder name here.

page 12 PFMA Connection



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