

MEMBERSHIP COMMITTEE

The past several months have been quite busy for the membership group. We attempted to contact all past members, back to 1985. With no exceptions, all past members rejoined NEHES, or were no longer affiliated with their former employer. This not only confirms the large turnover rate for Hospital Engineers, but points out the real need for our members to follow up on the new folks and encourage them to consider membership in our society.

Bob Campbell, Membership Chairman

FALL SEMINAR

The NEHES Board members are looking forward to seeing you for annual fall seminar on October 18, 19, & 20, at the beautiful Samoset Resort in Rockport, Maine.

The Joint Commission will provide a two day seminar on Plant Technology and Safety Management. This is a customary education program and will include:

- instruction by two (2) Joint Commission faculty
- a seminar workbook for each participant
- provision of custom program certificates of attendance

In addition to the education part of the program, there will be a western night with square dancing etc., followed by a formal dinner the next evening. A spouses program will be planned as well.

So come one and all and have a good time.

Robert Lord Program Chairman

BOARD OF DIRECTORS MEETING

JUNE 2, 1989

REPORT OF BY-LAWS COMMITTEE

Listed below are recommendations for changes to the By-Laws.

The following areas make reference to the word "chairman":

Article V - Section 5-4, Section 5-9

Article VI - Section 6-2, Section 6-3

Article IX - Section 9-5, Section 9-6

Change the word chairman to "chairperson" wherever it appears in the By-Laws.

Article V, Section 5-6:

Change:

"and shall be the official liaison to JCAHO"

To read:

The president-elect shall, in the absence of, or because of incapacity of the president, perform all duties and assume all responsibilities of the president. He shall also act as planning and program coordinator for the Spring and Fall Seminars and shall be the official liaison to JCAHO. The position of president will automatically be filled by the president-elect.

Article V, Section 5-23:

Add: The Treasurer shall for each calendar year, file appropriate tax forms to the Internal Revenue Service.

Article V, Section 5-24:

Change:

Change from Section 5-23 to Section 5-24

Article VI, Section 6-7:

Add:

In addition to the duties specified in the By-Laws all Board Members shall update and use the established guidelines in the performance of their duty.

Article VII, Section 7-1:

Change:

All representatives shall be a current NEHES Member or an approved member prior to taking office.

To read:

"At the Annual Meeting members in good standing of each New England State shall elect a representative to serve as a member of the Board of Directors for a term of one year. All representatives shall be a current NEHES member or an approved member prior to taking office. Should the members not elect a representative, the Board of Directors shall appoint a member from that state as representative.

Respectfully submitted,

Theron Manning Chairman, By-Laws Committee

JCAHO RECORD OF TRAINING

I was cited by the JCAHO because I did not have records of specific technical training for HVAC, plumber, electrician and fireman. Not believing that was what was required I sent a letter to Ode Keil. What I got back was a form statement which went out to all the inspectors. It said;

"After six weeks of surveys using the 1989 PTSM standards and KIPS, things appear to be going well. We are seeing the usual aches and pains of making a change. The best part of that is when the concerns causing the aches and pains are discussed, people are discovering that surveyors really are listening to how you do what you do to meet PTSM standards.

Two questions that have come up frequently are related to utilities management. The first concerns marketing by a commercial firm regarding testing of medical gas systems. Contrary to the statements in the advertising literature, the JCAHO does not mandate purity testing as part of the management of medical gas systems.

The second question relates to training of engineering trade personnel. It is important to understand that this requirement does not address the basic competence of the personnel. We assume that if you need a plumber or electrician you hire a qualified person. The training we speak of is the training needed to customize your staff to work in your hospital. It includes specialized technical training, infection control, procedures to follow when working in various areas of the hospital and emergency operating procedures all of hours of the day or night.

I want to finish by restating my desire to have all WHEA members and friends to help us improve our services to you by writing or calling any time you encounter a situation where you feel like you are working for the Joint Commission rather than for improving patient care."

David Hathaway

HOSPITAL EQUIPMENT FOR SALE

The former Brookline Hospital has many items for sale that your organization might be interested in buying.

If you have an interest, please call me at (617) 734-1330 to make arrangements to see the items at the hospital and to make a price quotation.

Please call me if you have any questions.

Robert J. Wood

Director, Facility Operations, Brookline Hospital

PROFESSIONAL ASSOCIATIONS

The Value of Membership

We often define ourselves and perhaps more importantly, are defined by others in terms of what we do: "I'm an engineer," "I'm a technician," "I'm a manager." Yet many people go to work each day with little thought about their future. Perhaps the job has become a means to an end, something done five days a week for a paycheck. The distinction between a job and a career is important.

Do you think of yourself as a representative of your profession? Are you concerned about how your work reflects on the profession or sets standards for the profession? If you focus only on what you do, or if you don't make an effort to educate yourself on what's happening in your field, you can develop tunnel vision.

If you really want to be considered a professional, you have to recognize that there may be new and better ideas to help you do your job more effectively and efficiently. If you really want more from your job, you must be willing to bring more to it. Membership in a professional association can expand your horizons in many ways.

You shouldn't join a professional association simply to list the membership on your resume. If you're not going to get something from the association which is useful to you, don't join. You should become a member expecting to find courses, seminars, practical information in journal articles, and networking opportunities.

Participation in an association and an outward focus on a career are typical of professionals who are openminded, creative, and interested in new advances in the field. An "I'm just a member," response suggests someone may have an "I just work here" attitude and an "I'm not giving anything extra to the job" perspective.

The most important benefit of membership in a professional association is the opportunity to network. Networking means meeting people in the same field, in the same position, perhaps with the same problems. Talking with peers can validate your experiences, confirm that problems are real, and that your accomplishments are meaningful. It's impossible to know everything about your job. There are always new ideas. We're always inventing better ways to do practically everything.

If you want to acquire a broader window on the world and your career through membership in a professional association, but are unsure which to join, start with the basics.

Call each association and ask for membership information. After you have had a chance to read it, you may want to call back with specific questions. Most associations have a membership director you can speak to.

Talk with members to get their views on the value of membership.

Some employers are cutting back on support of professional dues for employees. If this is the case for you, you may need to take a futuristic view. You could pay the membership dues yourself - as an investment in your future. Membership may provide that one essential piece of information which could save you vast amounts of money or time.

You should be able to convince your employer that membership will enable you to do your job better.

Remember: the best jobs are not found in the newspaper or the back of magazines. You find them most often by word of mouth. If you are good at what you do, you'll be able to demonstrate that to people in the association. At some point that information will get to the right person, and you'll get a call about the job you're looking for.

It's just as important, and perhaps more so, to become a member of local or regional associations. You have more chances to meet people; getting involved usually offers more interaction, and at much less cost.

People burn out. New leaders have to be ready to serve as officers. Don't expect your local group will always be there if you won't help by taking an active role. And such involvement is usually viewed positively by employers.

Associations must rely on the members to bring issues and topics to their attention. If you want to see certain actions taken, you have to talk to the staff. New members would be surprised at how interested the staff will be in their opinions.

Keep in mind that, to the staff, you are a professional by virtue of being a member of the association. The staff will give you, and your ideas, the same respect due to any professional in the field. One way to help insure a response is to write a letter directed to a specific staff person; letters get attention.

People join professional associations for a variety of reasons. Some join because continuing education is mandated. Some join to maintain professional credibility, or because significant professional status is associated with membership.

Where else, but in a professional association, can someone new to the field have the opportunity for interaction with the most respected experts in the field? You gain access to so many resources simply by being an association member.

There is too much information in any field for professionals to carry it all around in their heads. There is so much happening with technology that you are doing yourself a disservice if you're not accessing the most useful sources of knowledge. If you are serious about your job and your career, you can't afford not to become an active member of a professional association.

Jack Berger, J. B. Thomas Hospital

HOSPITAL EQUIPMENT NEEDED

The American Medical Resources Foundation, Inc. (AMRF) has been receiving many requests for medical equipment from hospitals and clinics serving the poor in the third world and developing nations.

Please contact them at:

AMRF P.O. Box 343
Lexington, MA 02173
Tel: (617) 863-2363
FAX: (617) 862-7739

CONTROL MEASURES FOR POLLUTANTS

Pollutant	Control Measures	
	Equipment and Materials	Ventilation and Design
Respirable particles	<ul style="list-style-type: none"> High efficiency filters Tight sealing doors and grates Properly drafting chimney Electrostatic precipitators 	<ul style="list-style-type: none"> Zone and ventilate for smoking Supply outside combustion air to heater and fireplace Relocate air intakes Maintain filter system
NO1, NO2	<ul style="list-style-type: none"> Remove gasoline engine Pilotless ignition 	<ul style="list-style-type: none"> Effective hood vent over source Isolate garage from indoor space
CO	<ul style="list-style-type: none"> Pilotless ignition Restrict heater use to uninhabited space Use catalytic converter Replace indoor gasoline engines with electric 	<ul style="list-style-type: none"> Supply outside combustion air Vent emission outside Kitchen/hood vent Relocate vents Provide smoking zones Isolate garage from indoor space
CO2	<ul style="list-style-type: none"> Check static pressure in return air ducts to make sure return is not overriding fresh air intake 	<ul style="list-style-type: none"> Isolate gargaes from indoor space
Agents from biological sources	<ul style="list-style-type: none"> Insulate to prevent condensation Damp-proof foundation, ducts Proper drainage of drip pans under condenser coils Add bacteriocides to steam and water for humidifiers and cooling towers Proper maintenance of filters and ducts Routine cleaning Disgard water-damaged floor coverings Do not use cool-mist humidifiers and vaporizers 	<ul style="list-style-type: none"> Maintain inside relative humidities of 35 - 50% Exhaust bath and kitchen Vent crawl spaces
Formaldehyde	<ul style="list-style-type: none"> Substitute products such as phenolic resin plywood Seal sources Removal of materials 	<ul style="list-style-type: none"> Increase air exchange to house or office
Radon and radon daughters	<ul style="list-style-type: none"> Vapor barrier around foundation Damp-proof basement and crawl space Seal cracks and holes in floor traps and drains Install charcoal water scrubber for well water Completely seal foundation 	<ul style="list-style-type: none"> Vent crawl space Vent sumphole to exterior Subslab depressurization Subslab depressurization Vent bathroom and laundry to exterior
Volatile organic compounds	<ul style="list-style-type: none"> Substitute products Isolate storage areas Apply only according to specifications Do not locate transformers indoors 	<ul style="list-style-type: none"> Use only with adequate ventilation Ventilate laundry, shop Provide separate ventilation to storage area
bestos	<ul style="list-style-type: none"> Removal Injection sealant Wrap pipes with plastic and duct tape. 	<ul style="list-style-type: none"> Ventilation does not provide adequate protection

SAMPLING EQUIPMENT

Pollutant Sampler	Manufacturing Company	Sensitivity and Integrating Time	Approximate Cost
Radon: track etch detector	Terradex Corporation 460 N. Wigal Lane Walnut Creek, CA 94598 (415) 938-2545	1-3 month exposure 1 to 4 pCi/L	\$20 to \$60 depending on sensitivity desired.
Radon; charcoal canister detector	RTCA 12 West Main Street Elmsford, NY 10523 (914) 347-5010	4 days 0.1 pCi/L	\$35 / canister includes shipment and analysis costs
Organic Vapors	Industrial Scientific Corporation 355 Steubenville Pike Oakdale, PA 15071 (412) 758-4353		
Organic vapors: hydrocarbon chemical reaction tubes	National Draeger, Inc. P.O. Box 120 Pittsburgh, PA 15230 (412) 787-8383	100 to 3,000 ppm for 4 to 8 h	\$3 / tube, \$900 for pump and accessories
Organic Vapors: charcoal badges	3M Corporation Technical Service Department 3M Center St. Paul, MN 55144 (612) 733-1110	Depends on vapors and sampling times; minimum level, 10 / mg	\$10 / badge; \$50 to \$300 analysis by GC or GC / MS
Formaldehyde: diffusion tube	Air Quality Research, Inc. 901 Grayson Street Berkeley, CA 94710 (415) 644-2097	5 to 7 days	\$48 kit includes 2 monitors, analysis and report
Formaldehyde: pro-tek adsorption badge	E.I. DuPont Company Applied Technical Division P.O. Box 110 Kennett Square, PA 19348 1 (800) 344-4900	1.6 to 54 ppm/h up to 7 days or 0.2 to 6.75 ppm / 8 h TWA	\$20 / badge; \$25 to \$80 for analysis
Formaldehyde: diffusion monitor	3M Corporation Technical Service Dept. Building 260-3-2, 3 M Center St. Paul, MN 55144 (612) 733-1110	0.1 ppm for 8 h	\$37 / monitor and analysis
NO ₂ personal and alarm	MDA Scientific 405 Barclay Blvd. Lincolnshire, IL 60069 1 (800) 323-2000	2 to 3 ppm: 1/3 TLV electrochemical cell based 15 min to 8 h TWA	\$800 / detector \$100 / output; \$2,075 / dosimeter; \$1,045 / readout unit
NO ₂ diffusion tubes	Environmental Sciences and Physiology Harvard School of Public Health 665 Huntington Avenue Boston, MA 02115 (617) 732-1000	500 ppb/h integrated	\$10 / tube, research only
NO ₂ diffusion badge	Environmental Sciences and Physiology Harvard School of Public Health 665 Huntington Avenue Boston, MA 02115 (617) 732-1000	50 ppb/h	\$15/badge, research only
CO: passive badge	Lab Safety Supply Co. P.O. Box 1368 Janesville, WI 53547 (608) 754-2345	50 ppm for 8h produces color change	\$3/holder; \$12.75 / 10 indicating papers
CO: detector tube integrated	National Draeger, Inc. P.O. Box 120 Pittsburgh, PA 15230 (412) 787-8383	2.5 ppm for 8 h	\$255 pump and accessories; \$3 / tube
CO: detector tube grab	Sensidyne, Inc. 12345 Sparkey Road Suite E Largo, FL 33543 (813) 530-3602	5 ppm/min	\$130 pump, \$2 / tube

CFC'S AND OZONE

Papers and magazines are full of articles about the hole in the ozone layer over Antarctica which has been blamed on CFC gases. In 1986, the US and other nations signed an international agreement called the Montreal Protocol where they agreed to cut CFC production in half by 1998. That is of particular concern to our industry, because about 40% of the CFC's used in the US are used in air conditioning and refrigeration systems. A new law in Vermont will prevent anyone from selling or registering a car with CFC-based air conditioning in that state after 1993.

There is a good deal of confusion about what will be affected by these restrictions on CFC's. Most smaller air conditioning systems use R-22 as a refrigerant, and R-22 is apparently far less damaging to the ozone than R-11 and R-12 - by a factor of 20. In the long term, it may be necessary to control R-22 as well, but for the foreseeable future, refrigerant should be available to maintain most air conditioning which uses R-22.

R-11 is used primarily in centrifugal chillers, which are common in large systems, but R-11 is also widely used as a solvent for cleaning up contaminated systems. R-12 is primarily used in low temperature refrigeration systems and is also used in a few high speed centrifugal chillers. One of the biggest HVAC/R uses for R-12, and a major source of CFC discharges to the atmosphere, is auto air conditioning.

All systems using R-11 and R-12 will be substantially affected by the reduced availability of these refrigerants and by strict controls which will be imposed on their release and disposal. Refrigerant manufacturers are hard at work trying to develop substitute refrigerants which will be as non-toxic and almost as efficient as the harmful ones. One new compound, R-123, looks promising as an ozone-safe direct replacement for R-11 in existing centrifugal chillers. It is expected to be available in 1991. No likely direct replacement for R-12 has yet emerged from the lab, but there is a great deal of research under way to find one and a new refrigerant, R-134a, is being evaluated.

Certain CFC's may represent a real threat to the environment, but the majority of air conditioning systems use relatively harmless R-22, so most system operators need not be concerned about causing damage to the ozone layer. Dave Elovitz, Energy Economics, Inc.

WHAT'S IT WORTH?

What is the worth of a JCAHO accreditation to your institution? Ask your Public Affairs officer, your Comptroller, your Administrator and your boss. Is it worth an investment of \$125.00 and 4 days of your time?

That is what it takes for you to attend a special custom education program sponsored by NEHES and presented by the JACHO. The program will be held October 17th thru 20 and will concern Plant Technology and Safety Management. Topics include: PTSM Standards Update, KIPS Scoring Guidelines; Survey process; Safety Management and Standards Review.

The program is designed to help your institution understand and meet the JCAHO standards for healthcare accreditation. Specific areas of Standards Review will be discussed in detail and there will be plenty of time for questions and answers of the expert JCAHO staff.

The cost to your institution is \$125.00 and the return value can not be calculated in simple monetary figures.

What is a JCAHO accreditation worth?

T.J. Shubback
Editor

SCAMS ARE EVERYWHERE

I read with interest your article in the New England Hospital Engineers Society Newsletter of second quarter April 1989 entitled, "Latest Scam". Approximately the same time I also received a call from a Dr. Miller. Dr. Miller did not identify where he was calling from but again he used our president's name. Unfortunately our president does not use the same name that Dr. Miller gave him which was an immediate tip off that something was amiss. Interestingly enough his story was identical in both cases. After I did a little research (checked with our president) he called me back and I told him "thanks but no thanks" and I think at this point he realized that I was on to the scheme and hung up quickly.

I also alerted the local Chamber of Commerce that this kind of thing was happening in the hope that others might be forewarned.

Edward W. Hollidge
Director, Engineering Services
Maine Medical Center

SICK BUILDING SYNDROME

New construction techniques and ventilation practices directed at conserving energy have led to increasing problems with air quality in office and hospital environments. Some pollutants found today in buildings are: Radon, Cigarette Smoke, Combustion Gases and Particles, Asbestos, Toxic Chemicals, Formaldehyde, Lead, Microbial and Biologic Agents. These agents, as well as others I have not listed, have led to numerous employee symptoms such as mucous membrane and eye irritation, cough, chest tightness, fatigue, headache and malaise.

In a recent episode at my own hospital, I was called in one night because a strange smell and noise were coming from a department head's office. When I opened the door and went into the room, my eyes began to burn and I experienced severe chest tightness. The cause of the problem, later discovered, was the room was full of Ozone, a highly toxic pollutant that above 0.1ppm causes headaches, eye irritation and respiratory disease. The source of the Ozone was a defective heater on a fish tank, causing a high voltage discharge, producing the Ozone. Since the room was small and not ventilated, a large concentration of Ozone built up.

Radon gas is now an indoor pollutant that has gained particular attention of late and is credited with causing 20,000 deaths a year due to lung cancer. The level for action is above 4pCi/L (pico curies per liter) and may require sealing of cracks and holes in the foundation. A more severe case may require digging out under the foundation and mechanically ventilating the space.

Some facts are that smokers have a 10 time more probability of getting lung cancer than non smokers and a 20 time more probability when high Radon levels are thrown in. These are pretty scary statistics.

At a recent seminar I attended at Massasoit Community College on Indoor Air Pollution, Lisa Compe, Industrial Hygienist and Donald Redpath, Assistant Technical Director of Certified Engineering and Testing Company, gave many examples of sites that had air pollution problems, their causes and the remedies that were necessary to correct them. In many circumstances, increased air exchange in either a specific zone or throughout a structure effectively reduces pollutant concentrations. Local exhaust of photocopying rooms, areas where smoking is permitted, kitchens, basements, sump pump areas and bathrooms reduces pollutant concentration at relatively low cost. However, zone ventilation is ineffective for emissions that originate from many locations or from materials used throughout a structure. For such widespread sources, a localized source of fresh air may create zones of adequate air quality. More often, ventilation must be increased throughout the structure. The extent to which ventilation should be increased is uncertain, although the American Society of Heating, Refrigeration and Air Conditioning Engineers standards provide some guidance. Although 5CFM per person is twice the ventilation needed to maintain CO2 concentration below 0.5%, A.S.H.R.E. recommends 7 to 10 CFM for most indoor environments where smoking is not permitted.

I have attached a table of commercially available sampling equipment for indoor air pollutants other than particulates, which may be of interest to you. I have also included a table of control measures for pollutants.

Thomas Galligan
New England Sinai Hospital and
Rehabilitation Center

BRADLEY HOSPITAL TIME SHEETS

The Maintenance Department at Bradley Hospital is operated under a program whereby maintenance personnel make out daily time sheets containing the following information:

BLDCODE = Building Worked in
FLRCODE = Floor worked on
DEPT CODE = Department worked in
NAT CODE = Nature of work performed

CM = Corrective Maintenance
DR = Driving
GR = Grounds
NI = New Installation
OT = Other
PM = Preventive Maintenance
PI = Preventative Maintenance Inspection
SH = Shop

TRADCODE = Trade involved in work
HOURS WORKED = Regular or overtime
COMPLETED = Yes or No
EMPINIT = Employee Initials

These sheets are proof read each day by the Director of Maintenance. This serves two purposes, first, it assures that the time sheets are filled out correctly for computer codes and secondly, gives the Director of Maintenance a chance to review on a daily basis where the maintenance time is being spent. This information is then entered into a computer. At the end of each month the computer prints a report by department showing the hours spent in each, what was done and by whom.

If necessary, a more detailed report can be produced showing the following:

- Work completed by building
- Work completed by floors
- Work completed by departments
- Work completed by individuals
- Work completed by trades
- Work completed by nature of work

Also, overtime hours and the department or problem that caused the overtime can be traced through the use of these computer print outs.

Reports also give a past history of manpower that can be used to justify manpower needs when preparing budgets, justifying overtime hours, snow removal, etc. These reports can be used to keep track of time estimates for inhouse construction projects and in justifying future estimates.

Reports were found to be very helpful during JCAHO inspection in documentation of time spent on preventative maintenance.

George M. Silva
Director of Maintenance
Bradley Hospital, RI

NEHES cannot endorse
vendors or their products.

JOB INFORMATION
MAY BE OBTAINED FROM
PRESIDENT ED BOYER
AT (508) 679-7025.

THE NEWSLETTER
is dedicated to the NEHES objective
"to promote the mutual exchange of technical
assistance, ideas and experience."

Please submit articles for publication prior to:
December 16, 1989.

NEW ENGLAND HOSPITAL ENGINEERS' SOCIETY, INC.

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