FOURTH QUARTER 1992

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INDOOR AIR PROBLEMS

Indoor air problems are quickly becoming a major source of problems for hospital engineers. In many cases, solutions to these problems are expensive or they are very difficult to resolve without using some of the concepts that I will describe. Frequent problems such as those listed below task hospital engineers and often require considerable resources (labor and construction dollars) to resolve.

1. Health problems such as coughing, eye irritation, headaches and allergic reactions.
2. Reduced productivity due to discomfort and absenteeism.
3. Deterioration of equipment and or furnishings.
4. Increased labor management problems.
5. Increased liability issues.

IAQ (continued on page 12)

ANNUAL SEMINAR- A QUALITY PRODUCT

The 1992 Annual NEHES seminar was a resounding success. The Einstein Consulting Group presented Quality Care Thru Focused Engineering. The two day seminar was attended by nearly 70 hospital engineers from around New England. The New Hampshire hospital engineers are to be congratulated for the quality of the program, the excellent site in Portsmouth and making it a gala affair (refer to pages 6-8 for some action photos). We also thank the vendors for their participation and look forward to the 1993 program in Burlington, Vermont chaired by Dana Swenson.

Book Review

QUALITY OR ELSE: The Revolution In World Business

by Lloyd Dobyns and Clare Crawford-Mason

It's survival of the fittest - and fitness is judged by quality. Will the country that put the first man on the moon abandon the world to doom? the United States of America holds the key to world stability, but we do not know how to manipulate the lock mechanism... while not a gloom and doom book, Quality or Else has underlying messages of potential ruin for America and the world.

The authors assess the current levels of quality production in the world today and present a detailed history of quality management worldwide, while concentrating on American quality and, in particular, on the absence of quality in the States. The focus of the book is the compelling arguments for the need for total quality management (TQM) in all sectors of American society, including industry, service, education, and government. These arguments are convincing; they reach the reader through their emotions as well as their logic. This reader is convinced that the authors are correct but is left with some concerns.

The primary concern is with the format of the book. It is a very slow starter and has the potential to lose its audience before it actually presents the important message. The opening chapters concentrate on the historical background of quality and America's relations to this history. The authors then move on to bio-TQM (continued on page 2)
President's Message

At the NEHES Board Meeting
12/4/92 at Nashua, NH

This, the last meeting of the year and of my term as president, is also the start for the newly elected Board and the work ahead for them. A year is a very short time during which a president tries to accomplish all the things that have been on his mind as he goes through the chairs.

I want to take this opportunity to thank the Board on behalf of myself and for the entire membership who they serve. We have come to rely on the NEHES Board both for their dedication and for the programs which they develop.

I also want to wish the new President, Barney Bolton a very successful and gratifying 1993.

JACK BERGER,
1992 NEHES PRESIDENT

President's speech at the annual banquet:

What we learn is not ours to keep because we didn't invent or discover it. We learned it from others who in turn learned it from those who preceded them. It is through fine organizations like the New England Hospital Engineers that we too can pass on our knowledge to newer members and thereby complete the cycle. We owe it to the future of our profession....

Secretary's Minutes
Annual Meeting Fall Seminar 1992

The Spring 1993 Seminar will be sponsored by the Rhode Island Hospital Engineers and will be held on Tuesday in Boston, March 30, in conjunction with the New England Healthcare Assembly. The Fall Seminar will be sponsored by the VT Hosp. Engineers on September 28. Dana Swenson will be chairing this event. Our next annual meeting will be on September 29, 1993.

To date we have 280 members. Of those 280 members, 249 are active, 30 are honorary and 1 associate. This year we have added 34 new members. The breakdown by states is as follows:
- MA 156
- RI 19
- NH 18
- ME 28
- VT 27
- CN 28
- live outside New England

Submitted by Robert Lord, Secretary

- CHILLERS 500T to 750T
- If anyone is planning on installing a large chiller for 1994-1995 time frame, would you please pass along to the newsletter what information you are learning about the use of various refrigerants and their future life expectancy. With the current pressure on eliminating Freon 11 and 12, and the uncertain safety of freon 123 and freon 124, we are in a quandry for planning the chiller for the 1995s. Are we having to go back to the absorption units and the constant problems with corrosion? I would hope not, yet that may be the only way out of this waiting for the manufacturers to find the best chiller and refrigerant design.
- David Hathaway
  Mt. Auburn Hospital

TQM (continued from page 1)

the graphical information about the recognized quality gurus throughout the world. While all of this is important information, it is dry and should not dominate a full one-third of the book. If it was felt to be necessary to the message, perhaps it could have been woven more skillfully throughout the more interesting sections of the work that dealt with current reality.

A secondary concern is that the authors assert the overwhelming requirement for quality management but leave wide possibilities for interpreting and achieving the goal. There is an inherent danger: readers could be left frustrated, feeling that they need to make huge changes but believing that they need to undertake volumes of time consuming study in order to begin. This could prevent many from taking that all-important first step toward developing a quality process in their own lives.

Fortunately these concerns are not the dominant experience of this book. The authors have conveyed their message of concern with very convincing arguments. They concentrate on success stories, particularly in America, and rely heavily on interviews with and other statements by quality leaders in American industry, education and government. What is the message? Total quality management is the only avenue to Americas survival as a world power.

America has traditionally relied on quantity production as the route to profit and growth. This was proper during the post world War II era but is no longer appropriate. Consumers then demanded more, more, more, but now they demanded better, better, better. We have not changed our traditional approach to meet these demands and consequently we are rapidly losing our markets and our credibility both at home and abroad. That our country is in trouble is evident. The deficit is so
NEW ENGLAND STATES REPORTS

Connecticut Report

The Connecticut Hosp. Engineers Society has concluded its twenty-eighth year of outstanding educational and informative programs.

The January 1992 meeting was held at St. Raphaels Hosp., New Haven, CT. This meeting was highlighted by a presentation on the American Disabilities Act made by Mr. Ron Palaia A.I.A., a principle with the architectural firm of Stacker, LaBau, Arnell & McManus. The presentation dealt with the potential impact of A.D.A. on hospital facilities and some common compliance strategies. The presentation was well received by all those in attendance including one special guest, Mr. Jack Berger, NEHES President.

The March 1992 meeting was held at Stamford Hospital. The focus of this meeting was two fold. First, there was an informative presentation on the use of ozone gas as a replacement for traditional chemical water treatment in cooling towers. This was followed by an invaluable round table discussion centered around the recent JCAHO and HCFA inspections recently carried out at several CT hospitals.

On April 29, 1992, the CT Hospital Engineers and the New England Society for Clinical Engineers co-sponsored a very successful and widely acclaimed presentation on "PTSM Standards: Current Issues". The key speaker was Ode Keil, Director, Plant Technology and Safety Mgmt. for the JCAHO.

The May 1992 meeting was conducted at the offices of the CT Hosp. Assoc. A short presentation was made by Mr. Anthony Caliguri on the shared services contracts administered by C.H.A.

The society conducted their annual meeting on September 25, 1992, also at C.H.A. The new slate of society officers was voted in for 1992/93 and is as follows:

President:
Chris Burney - Stamford

Vice President:
Ed Browne - Waterbury Hospital

Treasurer:
Jack McCarthy - New Britian Mem. Hospital

Secretary:
Bill Zappadelli - H.D. Altobello

Children and Youth Center

By-Laws and Steering:
Ed Morrone - Milford Hospital

Historian:
Carl Kallgren - retired

Programs and Education:
Bill Waldron - Hosp of St. Raphael

NEHES Rep:
Robert Palumberi - St. Francis

Membership:
Chris Kelly - Waterbury Hospital

Newsletter:
Larry Orkine - Norwalk Hospital

Social Committee:
Les Lewandowski - Manchester Mem Hosp

Bill Waldron presented a tentative list of education programs for the upcoming year. They are as follows:

CT State Health Dept. Code Review

Thermo-Scanning

Motivating our work force

Staging levels

Total Quality Mgmt.

TB/HIV HVAC Infection Control Methods

The CT Hospital Engineers Society kicked off their twenty-ninth year at with a general meeting at the Waterbury Hospital Health Center on November 19, 1992.

A regular society business meeting was conducted prior to the scheduled seminar. Mr. Chris Burney, President, C.H.E.S. announced that Ed Browne, Vice President, C.H.E.S. would be stepping down from his chair effective this date. Ed has accepted the position of Director, Plant Operations at Boston University Medical Center, and will be starting there in early December.

Mr. Chris Kelly, Waterbury Hospital was nominated to replace Ed Browne as Vice President for the remainder of the term.

Mr. Chris Burney noted that the CT representative to the New England Hospital Engineers Society is an open position on the board and that he would be looking for a volunteer to fill this slot.

The responsibility for membership will be assumed by Mr. Robert Palumberi of St. Francis Hospital, Hartford.

The business meeting was followed by an informative presentation on Infrared Photography by George Carrol, President, Thermo Scan. A roundtable discussion followed on the different ways this technology can benefit a facility.

The seminar was followed by a buffet lunch provided courtesy of the Waterbury Hospital Engineering Department.

The society is looking forward to what we all hope will be a great year for CHES.

I would also like to personally acknowledge with sincere appreciation the efforts of all the NEHES Board Members this year. It was an honor to be associated with such a fine group of healthcare engineering professionals and I look forward to our groups continued success in 1993.

Edward Browne
State Representative
Maine Report

The State of Maine Hospital Engineers met on Thursday, 11/19/92 in Augusta. Lunch was from 12 noon to 12:30 pm followed by a presentation from Tully Zipkin of D/A Technologies on patient monitoring systems. Mr Zipkin’s presentation covered a topic that is quickly becoming very important to all hospital engineers. If you haven’t already installed one of the systems in your hospital then you soon will be asked to do so. The concern for older patients that may wander off or get hurt going somewhere they shouldn’t is something most of us have to deal with. In addition, the possibility that newborns may be abducted from the hospital is a reason for most of us to consider this kind of protection. Mr. Zipkin’s program was well received with several engineers expressing the fact that they would be installing a monitoring system very soon.

Bob Lord gave a brief discussion on the activities at the last NEHES seminar that was held in Portsmouth, NH. Bob also passed out copies of the pay survey that was done for presentation at the fall seminar.

There was time spent on open discussion of any items that were of concern to the engineers. Some of the most important items were ADA, indoor air quality and of course compliance with JCAHO requirements.

Maine’s next meeting is set for January 21st 1993 and will cover compliance with OSHAs new rules on blood born pathogens.

Meeting adjourned at 2 pm.

Don Garrison
Maine Representative

Massachusetts Report

The Fall Seminar held in Portsmouth, NH was a great success and the New Hampshire group deserves a thank you for the great program.

Mass. Hospitals were represented by 37 attendees. We will be encouraging application for membership from those who have not already done so.

The South Shore Hospitals Engineering Society has begun its 37th year under the leadership of Pres. Russ Garland, Norwood Hospital and Sec/Treas Wayne Pitts, Milton Hospital.

Mr. Terry Ringer, our Mass. Rep. for the past two years, is unable to continue in this capacity. Terry did an outstanding job and his contributions and efforts will be missed. Thank you Terry!

As your newly elected State Rep, if necessary you may contact me at The Cooley Dickinson Hospital, 30 Locust St., Northampton, MA 01060, Tel. (413) 582-2313. Mr. Tom Whittaker, Dir. of Engineering, Bay State Medical Center, is the alternate Mass. Rep. He may be contacted at Bay State Med. Ctr, 759 Chestnut St., Springfield, MA 01199, (413) 784-4200.

Ernest Margeson
Massachusetts Representative

New Hampshire Report

A meeting of the New Hampshire Society of Hospital Engineers was held at the New Hampshire Hospital Association building in Concord on November 19, 1992.

Eleven were in attendance at the meeting. Membership applications were made by Donald Pughes and Kevin J. Stetson. The applications were reviewed, and both members were accepted into the society.

The education committee discussed paying for speakers, length of the program, vendor attendance and other topics.

There was a motion made by Jim Meehan to accept nominees for officers form last meeting. Derek Seeley seconded and asked acting secretary to vote to accept. This was done. The new officers are:

Steven Shaw, President
Ken Waite, Vice President
Steve Cutter, Secretary/Treasurer
Kurt Peterson, New England Hospital Engineers Society Representative

The December meeting was scheduled to be held at the Red Blazer Restaurant in Concord on December 17, 1992.

Submitted by
Kurt Peterson
Secretary
Rhode Island Report

The Fall Seminar has always been a most noteworthy event. This year was just as notable. The Rhode Island Group congratulates the N.H. Hospital Engineers who worked so hard to make it an enjoyable and educational seminar.

It has been a personal pleasure for me to have served as the R.I. Rep. for the past three years. Working with the Board Members makes you realize that we need one another and are strengthened by sharing our experiences with one another.

The 1993 Spring Seminar to be held at the Hynes Auditorium, in Boston, MA, on March 31 is in the works. The topic to be presented will be Chloroflorocarbons - CFC's As They Effect Institutions Today.

Registration will be between 8 and 9 am. Please note that our Meeting Room will be #12 and Luncheon will be served in Room #103. Beverly Jacobson, has assured me that the new rooms assigned to us this year are comparable to previous years.

Registration Fees remain $40.00 for members and $65.00 for Non-members. Non-members may apply $25.00 of their fee to become a member at the time of registration, if eligible. Additional information and a program flier will follow.

The New England Healthcare Assembly has asked me to share with you a news release referring to the launching of their (NEHA) Management Certificate Program at their 1992 Fall Meeting.

ASHE John Crowley was not present at this meeting because he had to leave to attend ASHE meeting. John submitted a report as follows:

During the past two years, it has been a privilege to represent the Society members on the ASHE Board. During this time I attended all of the Board meetings of ASHE as well as the Annual Meetings.

In an effort to keep the Regions better informed, ASHE has begun sending Chapter Newsletters and Board Reports to the Membership on a regular basis. These reports are the basis for the ASHE items found in your NEHES Newsletters and I trust they provide the members with timely updates of the Society activity. My thanks in particular to Tobey Clark for his efforts as Newsletter Editor. My congratulations to Bob Loranger, your newly elected ASHE Director. I trust you will give Bob the same support and encouragement you gave me over the last four years.

Certification (or lack of it) continues to be an issue for ASHE members. This was a "hot" topic at the last ASHE Board meeting and has been given to the APEX Committee for implementation. It should be noted that AHA does not support "certification" programs, so the response to this current request, while a step in the right direction, may not fulfill everyone's expectations. This issue bears watching. I would encourage those who have been interested to contact Bob Loranger. I will meet with him to bring him up-to-date on the history of this issue. There appears to be greater support for this 'type' of program among the Board than there was in the past, but it might wind up being called something like "credentialling". I will be requesting that incoming President Barney Bolton meet to discuss what this means and how it will or will not serve the members' needs.

My sincere thanks for your support over the past four years. It has been an honor and privilege to represent Region I in ASHE.

Ken Boyer
Rhode Island Representative

Vermont Report

The last gathering of the VT Hosp. Engineers was in Portsmouth, NH at the NEHES Fall Seminar. It was the consensus of all of the Vermont Engineers in attendance that it was an excellent program and that the NH Engineers truly did a fine job. As we look forward to hosting the 1993 Fall Seminar, we will draw heavily on the knowledge base and experience of those who have put on the many fine programs that have come before ours.

The next meeting of the Vt. Hosp. Engineers Society has been scheduled for Thursday, Dec. 16th. Dana Swenson will be hosting the program at the Medical Center Hosp of Vt in Burlington. We will see some of the new construction and existing mechanical spaces. Our main topics of discussion will be continued planning for the 1993 NEHES Fall Seminar and sharing of information and beginning to prepare for the upcoming JCAHO surveys that most of VT hospitals will be subject to in 1993.

Until we meet again, best wishes for a Merry Christmas and a happy holiday.

Mark Cappello
Vermont Representative
STUDENT AWARD WINNER.
Steve Shaw of Nashua (NH) Memorial (mustache) dines with Adam MacDonald, senior mechanical engineering student at the University of New Hampshire and Dean of Engineering Otis J. Sproul (far right). Mr. MacDonald was this year's student award winner.

PRIZES! Steve Shaw's height is used to advantage in insuring an honest draw by First Lady, Eunice Berger, for a door prize.

THE GREEN MOUNTAIN BOYS (AND GIRLS). Francis and Ralph Henry, Theron Mannin, and Mary and Bob LaBlanc enjoy themselves while waiting for one of the excellent meals served at the Sheraton Portsmouth.
IN THE EXHIBIT HALL. Jack Berger, 1992 NEHES President, presents a gift to Terry Ringer, Massachusetts Representative for services to society.

PAST PRESIDENTS BREAKFAST. Vince Gardner receives a special award from Jack Berger as Jack Gosselin, Ed Boyer and David Hathaway look on.
EVENING BOAT CRUISE

Tom Borden, Ed Boyer and 1993 President (and designated driver), Bernard Boyer, flash a simile for the camera during the cruise.

Past Presidents George Hawley and John Crowley stand with Bob Barris.
ASHE Board of Directors Meeting
Sheraton Grand Hotel, San Diego.
October 30-31, 1992

Election Results
The following results are from the election for the 1993 board of directors, which was completed in September:

President Elect -
James A. Shoemaker, FASHE
Director, Plant Operations
Deborah Heart and Lung Center
Trenton, NJ

Region 1
Robert A Loranger
Dir of Facilities
New England Medical Center Hospitals
Boston, MA

Region 2
George L. Thomas, FASHE
Director, Plant Operations & Facilities Hospital Center at Orange
Orange, NJ

Region 4
F. Dennis Grady
Director, Plant Operations
Memorial Hospital
Hollywood, FL

Region 9
Nicholas J. Dalba
Vice-President, Facilities Development
St. John’s Regional Medical Center
Oxnard, CA

Congratulations to these new board members, and welcome back to all other members. And much gratitude and appreciation to those board members who have now completed their terms, including John W. Crowley, SASHE (Region 1), P. Ryder Forrest III, FASHE (Region 4), and A.J. Haber, SASHE (Region 9). James A. Shoemaker, FASHE (Region 2) also finished his term, and will now serve as president-elect, and Carl Budde, FASHE will begin his second term as Region 5 representative.

The board also expresses its deep appreciation to Roger Olson, for his fine leadership and contributions to the society throughout all of his years of participation and especially during his 1992 term as ASHE president.

American Hospital Association
Update
The American Hospital Association has established a President’s Forum, consisting of the elected leadership of the AHA’s 17 personal membership societies. The purpose of the Forum is to more effectively integrate the advocacy efforts of AHA and its societies and to begin planning the role each society can play in reforming the US health care delivery system. Donald Wojtkowski, fashe, 1993 ASHE president, James A. Shoemaker, FASHE, 1993 president-elect and Nancy Montenegro, the society’s executive director will participate.

Tuberculosis Document to Come
The society will publish, in early 1993, a document to assist members in controlling the spread of Tuberculosis and other transmittable diseases within their institutions. Members will receive the document in their February mailing.

Quality Management in PTSM
Seminars
Quality Management in PTSM seminars, developed in cooperation with representatives of the JCAHO, are scheduled as follows:

- January 28-29 Dallas, TX
- February 11-12 Atlanta, GA
- February 25-26 Los Angeles, CA
- March 11-12 Washington, DC
- March 18-19 Minneapolis, MN
- March 25-26 New Orleans, LA
- April 8-9 Detroit, MI
- April 13-14 Philadelphia, PA
- April 22-23 Denver, CO
- May 6-7 Portland, OR
- May 10-11 Charlotte, NC
- May 17-18 San Francisco
- September 13-14 Tampa, FL

October 4-5 Scottsdale, AZ
October 7-8 Indianapolis, IN
October 21-22 Boston, MA

Please phone ASHE at 312-280-5223 to receive a brochure.

Service for Chapters
The board of directors reaffirmed it’s view that strong, viable chapters are important to the mission of the society. The board discussed ways it might provide chapters with the appropriate “tools” that will assist their development as healthy, effective and active organizations.

In addition to the services currently provided, the board approved plans for the following new services to chapters in 1993.

1. Chapter Development Conferences. This one day conference for chapters will be offered on June 13, the Sunday before the start of the ASHE annual conference. The conference will be comprised of educational session on chapter management including such topics as planning for chapter growth, developing leadership, motivating volunteers, conducting meetings, membership marketing, fund raising, etc. The conference affords chapter leaders the opportunity to share their experiences, find solutions to common problems, and swap the best ideas for strengthening their organizations. A survey to identify the topics of the greatest interest will be sent to chapters very shortly and more specific details will follow. Chapters are encouraged to participate.

2. Chapter Newsletter. The current chapter newsletter will be expanded and refocused to provide helpful tips on chapter management along with spotlights of successful chapters and programs.

3. Chapter Handbook. Before the 1993 year is over a guidebook will be developed to assist officers in the chapter operations including such
things as recruitment ideas and actual work tools for planning and chapter management.

4. Recognition. Already complete is a new promotional brochure better explaining, simplifying and clarifying the chapter recognition program. And, a national health care facilities management week-a long standing request of chapters - has been established. Chapters will receive discounts on the purchase of promotional kits.

Electronic Society of the Future

The Society is actively investigating methods for communicating electronically with the membership. Among the ideas being considered are a CD ROM Library System which would allow members to access past technical documents, current codes and standards, and other items. Also being investigated is a Bulletin Board System for collection of benchmarking data and a “quick help” feature for members to have questions answered quickly by others in the field. Much work still needs to be done before this can be accomplished. Stay tuned!

Facilities Operations

The Facilities operations committee is working toward the development of a tool that will assist members in determining maintenance staffing levels. The committee hopes to launch this long term project in 1993.

Safety and Security Management

ASHE’s Safety and Security section has published a safety policies and procedures manual. And will be working toward the development of a safety certificate program in 1993. For more information, call 312-280-6379.

Planning, Design and Construction

The 5th Annual Conference on Health Facility Planning, Design and Construction, scheduled for September 14-16, 1993 in New Orleans. This successful conference will be expanded in scope to include additional sessions on such topics as financing, equipment planning, interior design, and property management. New features in 1993 also include a trade show and design exhibit. For more information call 312-280-6379.

Clinical Engineering

The board approved a recommendation to rename the Clinical Engineering Section the Clinical Engineering and Medical Technology Management Section of ASHE.

Small and Rural Hospitals

To ensure that the needs and views of small and rural hospital members are addressed by the society the board agreed that each ASHE committee would include a member with a small and rural hospital perspective. Additionally, the board reaffirmed its view that chapters can be an important vehicle for reaching into the small and rural.

Actions for Professional Excellence

The board has charged the APEx committee with adding a testing component to the APEx recognition program. This enhancement is in response to requests for a program that recognizes members, in part, for the knowledge they have accumulated throughout their professional careers.

Facilities Management Recognition Week

October 24-30, 1993 has been established as National Health Care Facilities Management Week. Celebration kits of balloons, buttons, posters and other items will be available for members and chapters beginning May 1. Discounts are available to chapters. The week will honor the facilities management depart departments and staff for all of the important contributions they make to health care. In the future of the week will be celebrated the last full week of October. Call 312-280-6140 for more information.

Submitted by
John Crowley,
ASHE Region 1 Representative 1992

NFPA REPORT

The fall meeting of NFPA held in Dallas provided several educational sessions based on Emergency preparedness of medical institutions. Along with such distinguished speakers as the Administrator of Ontario’s Ministry of Health Hospital Planning, several Safety and fire officers from local hospitals shared fire experiences at their facilities. With all the building construction safeguards and volumes of safety procedures, fires do occur from many sources as confirmed by the fire experiences of these speakers. The conclusions and outcomes caused each facility to find flaws in their fire plan. I’ve recapped several thoughts that surfaced from these actual fires. Just how well prepared is your staff for an actual fire? Here are some of the assessments that may help you evaluate your preparedness.

Several problems were emphasized in the relationship of the Hospital to fire departments. The Fire departments lack of familiarity with the common procedures of the hospital fire plan, and the layout of the hospital complex, were prime contributors to the success or failure of the fire outcome. Educate and practice with the fire department, such basic things as access to the site. Are there obstructions to fire department equipment? Take the departments largest truck and try driving around your campus. Are there aerial restrictions? Are there bushes, trees or shrubs that prevent the use of ladders,
or that hide key fire department connections? Do you, your staff and the fire dept. know the locations of the siamese connections and what areas or equipment they serve? How is your building protected? Do you have partial sprinkling? If so, does the staff and the fire dept. know what locations are unprotected? Such key issues as storage of flammable liquids and locations of other hazardous materials that could expose your employees, patients or fire fighters, all play an important role in being prepared. I've only mentioned a few of many issues raised from fire investigations that prove that education and practice are our best tools for preparing for a fire disaster. Do not assume you are immune to fires. Take the time to review your fire preparedness and the Fire Dept's roll.

The Standards Review Committee of the Health Care Section discussed several proposed changes in NFPA 110, NFPA 99 and NFPA 14. Some changes within 99 are: a requirement for a normal power outlet within an operating room; changes with the classification of total number of beds to include such areas as OR, Recovery room and X-ray beds; a decrease in the requirement for ground fault protection on electrical mains to that such things as chillers, elevators and other large electrical demand items can be taken off the ground fault protection. GFT's are now only required on patient care area loads. The 99 committee recommended less stringent generator requirements in institutions where two generators are used, one for emergency power and one for energy management. In the proposed document the second generator, primarily used for peak shaving or load shedding, must be sized with capacity to pick up the load of the life safety branch of the emergency power systems as a back-up to a failure of the designated emergency generator. This back-up to the back-up would have eliminated the equipment branch of the emergency power system which handles such items as the medical vacuum system, compressed air system, elevators, air handlers and return air fans. All these items were deemed essential for a good health care environment by the majority of the health care section. Although the Committee for 99 presented several good arguments in favor of less stringent requirements for two generators versus a single generator system this code change was defeated because the energy management generator was not required to be sized to include the life safety and equipment branch of emergency power. The code reverts to its original text section 3-3.2.1.5.

With the complete re-write of NFPA 14 Standpipes and Hose systems several issues regarding pressure reducing valves, pressure restricting devices, use of 1.5" hose on class III service, and change in required pressure form 65 PSI to 100 PSI at the highest outlet were discussed. From the several submitted amendments to this document and numerous floor amendments at the voting session, no changes were adopted.

Some concern arose from the changes in 110 that require one step full load testing at the initial installation certification of Gen-sets. It was anticipated that there would be some opposition to this requirement from the generator or switch gear providers. No concerns were raised from these special interest groups during the approval of the 110 document submitted by the committee.

A dues increase was presented for approval to the voting members during this meeting. In the past, dues were $75. and $15. for each section of which you wish to become a member. The new dues will be $95. dollars but there is no additional charge for joining other sections.

The Health Care Section elected Paul Coleman of Portland, Oregon to serve as chairman for the next two years. One of Paul's goals is to increase the number of issues of "CODE RED" from 2 to 4 annually. It is his hope to use this communication tool to keep members informed of changes within the code and to allow the Health Care Section to become more pro-active versus reactive during the codes making process. This same theme has been introduced in the Health Care Section Standards Review Committee. At present the Health Care Section educational sessions are accredited continuing educational courses for Nursing Home Administrators. In the coming year, Paul will pursue continuing education credits for all persons attending the seminars. This could help with the requirements of JCAHO for continuing safety education. An amendment to the Health Care Section by-laws was presented and passed which changed the number of members of the nominating committee from seven to five.

In May of 93 NFPA 72 will be introduced as a new document that encompasses the present documents 721,71,74,72q and 72h. Many items that have been recommended practices in the past will now become code. Measurement of smoke detector sensitivity by percent of obscurity will become an annual requirement. The life safety code will be up for adoption at this meeting. It is anticipated that a renewed effort from the smoke detector industry and the fire service sections to requiring smoke detectors in all patient rooms will be a key 101 issue.

Norman Welsh
NEHES Representative to NFPA
INDOOR AIR QUALITY (cont.)

So how do we solve or prevent IAQ problems? We can provide good quality air using three principals:

1. Introduce and distribute an adequate supply of ventilation air using ASHRAE guidelines.
2. Control airborne contaminants such as ETO, nitrous oxide, photocopies, engine exhaust, etc.
3. Maintain acceptable temperature and humidity levels, and properly maintain HVAC systems.
4. Using some basic principles of management we can avert many problems before they become a crisis.

At our hospital we use the following:

1. We establish a climate that encourages active exchange of information. This eliminates management vs employee distrust (overreaction). It is always better to take a complaint seriously and try and discover the problems rather than to shrug it off.
2. Our maintenance staff employees play a critical role in identifying and averting IAQ problems. Make sure problems are reported promptly and checked out thoroughly.
3. Review of energy conservation policies. Many IAQ problems have been caused in the name of energy conservation. There should be a happy medium, additional energy costs are small compared to personnel dollars lost due to absenteeism, labor relations problems, etc.
4. We check out every complaint. We talk to the employee, we share any information we find with them. We treat these complaints as serious.
5. Make sure you have considered the implications of HVAC system modifications. Sometimes even minor modifications can cause considerable IAQ problems.
6. If serious health problems are a possibility, get expert help. IAQ problems are a product of multiple influences and sometimes our attempts to bring these problems under control do not produce the expected results.

Why do occupants complain about IAQ? Generally there are three reasons:

Health related problems
-Sick building syndrome (usually minor, temporary);
-Building related illnesses, one example would be Legionnaire's disease, another would be sickness because of too little fresh air; and
-Hypersensitivity (allergies, dust mold etc.)

Comfort related
-Thermal discomforts (humidity, temperature, drafts, etc);
-Nuisance factors (dust, stains, light, etc); and
-Psychosocial stressors (perception, misinformativ communication, misconceptions)
Comfort related problems are always present, they are often ignored, sometimes belittled, etc. Of course some of them come from what I call psychoceramics (crack pots). Whatever the source, they must be dealt with.

Physical stressors
-Light
-Noise
-Vibration; and
-Ergonomics, etc.
What are some of the known sources of IAQ contaminants?
-Outside air/Quality/Quantity
-Human activities (smoking)
-Materials & furnishings
-Chemicals in use operations and maintenance (O&M)
-Formaldehyde
- Bioaerosols - living or released from organisms. Dust mites, feces, endotoxins, microtoxins, molds, spores, etc.
-Volatile organic compounds
-Radon
-Asbestos
-Lead/Mercury based paint
-Hexavalent Chromium in cooling towers
-Cyclohexamines/Heating system humidification
-Air leakage around filters
-Dry drain traps
-No drain traps
-Mildew
-Pressure differentials/pollution pathways
-Overcrowding
-Obstructed vents
-Faulty dampers
-Fire/smoke dampers not operational
-Construction debris
-Improperly located vents, exhausts, air intakes
-Supplies & materials/Installation of new furnishings/Low emission products
-Equipment operating cycles
-Recirculation from contaminated areas
-Ventilation quantities
-HVAC operation and balance
-Drainage pans
-Humidifier valves
-Pest control activities
-Loading dock exhausts

We have listed many of the sources and problems associated with IAQ. Resolving the problems associated with these IAQ deficiencies will be easily handled if you do the following:

1. Maintain the HVAC systems properly.
2. Investigate complaints thoroughly and provide feed back.
3. Control or resolve the problems of contamination.

Remember in order for there to be an IAQ problem, one of the following must be true:
1. There must be under-ventilation.
2. There must be a source of unusual emission or contamination.
3. There must be hypersensitive (medically documented employee).
4. There must be complaints that are consistent with a change in building conditions (construction, mechanical failure, etc.)
Remember also that investigation is the key to resolving IAQ problems. At our hospital we use a six step process of elimination:

1. We clearly define the complaint & symptoms.
2. We interview affected occupants.
3. We interview HVAC operators, mechanics and inspect equipment.
4. We inspect the affected area (we try to keep this as narrow as possible).
5. We look for obvious explanations (pollutant sources, pathways, etc.).
6. If we haven't solved the problem then we proceed to a more complex investigation; CO2, temperature & humidity measurements. Additional sampling is sometimes required if our investigations and observations suggest a specific pollutant.

Indoor air quality (IAQ) can be a major source of problems for hospital engineers. However if your approach to resolving IAQ complaints is similar to those we have outlined then these problems can be kept to a minimum. Remember communicate, communicate, communicate with the occupants.

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**TQM (Continued from page 2)**

large the numbers are unimaginable, crime is rampant, poverty and unemployment are growing excessively fast, the quality of our educational systems and the level of illiteracy among our populace are pathetic. Is TQM the answer? Dobyns and Crawford-Mason answer with a resounding "Yes!" I am convinced that they are correct.

Education is the one key factor if we are to turn around our rapid decline. Education is the only mode of transportation that can carry America to the bright future. The current facts with regard to public education, higher education and worker education are quite depressing. Our literacy level is the lowest among the industrialized world powers, foreign students comprise over one-half of the enrollment in our doctoral programs, the public education system across the country is in a mess. These facts are widely recognized by our politicians and other leaders, including our self-proclaimed "Education President", Mr. Bush. However, goals are what are offered and solutions are what we need. Dobyns and Crawford-Mason assure us that quality management is the road from ruin. They also remind us that before we can begin walking that road there must be an acceptance that the problems are real and that they must be addressed. America needs a wake up call!

Motorola, IBM, Ford, FedEx and Xerox are a few of the major American companies that have adopted a quality management approach. The results have been dramatic for all of them. Their workers are more satisfied, their market share is growing and their profits are up. The facts show that quality leads to quantity and thus to higher profits. The authors refer to and extensively quote the executives from these quality success businesses. The proof that TQM works and is required to compete today is apparent in the results obtained by these companies.

One of the most interesting quality success stories concerns a small high school in Sitka, Alaska. The school has integrated the TQM teachings throughout its curriculum with amazing results. The students are part of the decision-making process and the consequences include dramatic decreases in tardiness and absence as well as dramatic increases in enthusiasm for learning. Greater than fifty percent of the students go to college upon graduation.

That Japan has emerged as a (the?) world economic power is also evident. TQM is the system that is credited for their current world position. The few American businesses that are still competing with success in the world market also attribute their success to TQM. Actually, the authors assert that in no instance has a business instituted TQM and regretted their decision.

Without quality, America will continue its downward spiral into the next century, eventually becoming a second or even third rate nation. As America is now the only country with the size and resources to maintain an acceptable level of world peace, our slide has more ominous undertones than just our own demise. We can drag the whole world down with us. We must not allow this to happen.

**Quality or else.......**

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