Calling All Members and Vendors to Fall Conference!

This year's Fall Conference, already trend-setting by being just three days (October 2-4), is setting another trend for members who can just spare only one day away from the desk. These folks can attend a one-day, action-packed "mini-conference" October 3 and get a bargain for under $100. Fall Conference is one of two major annual NEHES educational program sessions offering members the chance to discuss common situations with each other and learn from distinguished speakers representing many companies and regulatory agencies.

For those who can arrive early, registration begins Sunday, October 1 at the Host Hotel and Conference Center in Sturbridge, MA.

On Monday, October 2, a Board of Directors breakfast meeting is followed by educational sessions until 3 p.m. as well as a golf tournament during the same hours.

On Tuesday, two breakfasts start the day. One is for Past Presidents, the other is for members, guests, and vendors. After a vendors' Technology Exhibition from 9 a.m. to noon, vendors, members, and guests eat lunch together. Two more educational sessions follow. The day closes with an annual meeting for NEHES members, and, for all members, guests, and vendors, a social hour, the annual awards dinner and entertainment.

Mini-Conference October 3

"This is a barn burner of a day for under $100," said Joe Mona, one of the Conference organizers and Director of Facility Systems at Lawrence General Hospital (Lawrence, MA). "The vendors want to see lots of engineers there that day, and vendor response has been superb. We need to sow the seeds for future vendor support. This day with all that's scheduled will give engineers one of the biggest bangs for their educational bucks they've ever seen."

On Wednesday, October 3, a breakfast for vendors, members, and guests is followed by educational sessions, an interactive panel discussion, a social hour, and buffet dinner.

Reserve a Room Early

Joe advises members who need hotel reservations to register early because there are only a certain number of rooms reserved at the NEHES conference rate. That rate is $149 per room per night, single or double. Add $10 for a triple or quad rate. "If engineers use their credit card to reserve a room, they can always cancel the room 48 hours or earlier before the conference if they have to without penalty," Joe said.

Registration materials will be mailed to all NEHES members. Anyone wishing to have a favorite vendor support the Conference should call or e-mail Joe, (978) 683-4000, ext. 2570, or jmona@meganet.net.

Fees for the Conference are as follows: full conference, $195; members; $220 for nonmembers, includes NEHES membership dues through December, 2001, if membership is applied for at the conference. One-day fees are $100, members; $125, nonmembers. The spouse program fee for spouses of members and nonmembers is $50, including several meals and two days of activities.

Candidates for Engineer of the Year Sought

Once again, NEHES will choose a member to receive the annual Engineer of the Year award.

Jack Gosselin, Vice President of Facilities Management at Day Kimball Hospital (Putnam, CT), is chairing the committee. Other members will be announced soon.

The award is based on an individual's contributions to the Society and exemplary performance in healthcare engineering on a local, state, or national level, as well as service to fellow healthcare engineers.

Nomination forms will be mailed to all NEHES members this summer.

Please consider nominating a fellow member whom you consider deserving under the program's criteria.

The Engineer of the Year Committee will select a winner from the nominees, and the award will be presented at Fall Conference in Sturbridge, MA in October.

NEHES Newsletter Needs More Sponsors

If you have a favorite vendor, why not ask him or her if their company would be willing to sponsor an issue of NEHES?

For just $500, the company gets a logo in the newsletter, visibility in front of the entire NEHES membership, a two-year subscription to the NEHES Newsletter, and a personal thank-you letter from NEHES President Bob Loranger.

The sponsorship fee helps to defray costs of producing the newsletter.

If you'd like a sponsorship application and descriptive letter, please request them from Margaret Yip, (617) 636-5267 or send an e-mail to Myip@lifespan.org after June 28.
President’s Comments

Thanks to NEHES Liaisons for Hard Work and Excellent Articles

(EDITOR'S NOTE: THIS MONTH, PRESIDENT BOB LORANGER TALKS ABOUT A VARIETY OF TOPICS OF INTEREST TO NEHES MEMBERS. BOB IS THE DIRECTOR OF FACILITIES AT NEW ENGLAND MEDICAL CENTER, BOSTON.)

WHAT ARE NEHES’ PLANS FOR THE BENCHMARKING SURVEY JUST SENT TO MEMBERS A FEW WEEKS AGO?

NEHES initiated this year’s (2000) Facility Survey. We in NEHES will formulate our book of data collected from the survey and present it at the NEHES Fall Conference. ASHE will try to promote this survey in each region and compile the results. ASHE would like to present the data it has collected at the ASHE annual conference this summer in Seattle. We at NEHES will share our results with ASHE. I'd like to urge our members to respond to our NEHES form. It is more comprehensive and will appear in our book. (EDITOR’S NOTE: IN 1997, BOB CREATED A NEHES HEALTHCARE FACILITY BENCHMARKING SURVEY. THIS SURVEY ASKED FOR ANONYMOUS DATA FROM FACILITIES. DATA INCLUDED QUESTIONS RELATED TO SALARIES, JOBS, AND UTILITIES PURCHASED, VOLUMES OF WASTE GENERATED. SOME OF THE SAME DATA, AS WELL AS ADDITIONAL DATA, IS REQUESTED IN THE NEW SURVEY.)

WHAT IS THE STATUS OF THE ASHE PROGRAM OFFERING ASHE MEMBERS AND NON-MEMBERS THE OPPORTUNITY TO EARN CERTIFICATION FOR THE TITLE OF CERTIFIED HEALTHCARE FACILITIES MANAGER?

The ASHE Certification program is out and will be offered locally at H&R Block locations. Anyone may apply by filling out the form for qualification information and sending the fee. You don't have to be an ASHE member to take the exam, but you do have to have the experience and educational qualifications.

For more information, see the ASHE update article by Jack Gosselin elsewhere in this Newsletter.

WHAT FEEDBACK DO YOU HAVE FOR MEMBERS REGARDING SPRING SEMINAR HELD MARCH 28 IN LEOMINSTER, MA?

Spring Seminar was another big success. A great deal of thanks is due to our Rhode Island members who organized this year's seminar. The members seem to like this location and format. We were able to solicit more vendor support and pass the income along to members through lower fees for the event. The format will continue in the future.

WHY IS IT CRITICAL THAT NEHES MEMBERS READ AND SAVE THE NEW NEHES NEWSLETTER INSERT, CODES & STANDARDS?

Keeping updated on codes and standards has always ranked high on the list of healthcare facility responsibilities and the NEHES Board is committed to being responsive to this issue. To help meet this need, the Newsletter now has a pullout codes & standards section. Each issue will contain relevant codes and standards issues from our JCAHO and NFPA liaisons as well as any other related articles and comments contributed by members. We've made the section pullout so that it can easily be copied and distributed within member organizations.

FOR THE BENEFIT OF NEWER NEHES MEMBERS, WHO ARE THE NEHES LIAISON PERSONS?

We owe these three long-time veterans a great deal of thanks because they have kept us posted on ASHE (Jack Gosselin), JCAHO (Bob Thompson), and NFPA (Gene Cable) for a long time. They also write excellent, informative articles for our newsletter.

DOES THE NEHES EXECUTIVE BOARD HAVE ANY VOLUNTEER OPENINGS?

We are looking for a secretary to fill a two-year term. We also need state representatives who are able to attend Board meetings throughout the year (except April, July, and August). If you are interested in any of these positions, please contact me by email, Rloranger1@lifespan.org, or by phone, (617) 636-5267, or Joe Mona, President-Elect, jmona@meganet.net or (978) 683-4000, ext. 2570.

www.nehes.org Has Been Updated

Steve Cutter, web-master of www.nehes.org, has been busy updating the site.

Look for the library of videotapes that members may borrow from NEHES.

Steve has also added a Message board/forum. Members can go to this area of the web site and post a question or ask for information. If you see a posted question you can help with, you can reply. All responses are posted on the board for all to see.

The only caveat, per Steve, is that this feature is a "use it or lose it" benefit - it's supported by advertising and if members don't use the feature, it will be cancelled.

Steve has also worked with Margaret Yip in Bob Loranger's office to develop an online membership directory. NEHES members may now access the directory by password, which is now "engine" (all lower-case letters, do NOT use quotes), and by username, which is now "health" (all lower-case, no quotes). These two words will be changed quarterly and announced in this newsletter. Members' names are cross-referenced by engineer name and by healthcare facility.
NEHES Member Facility Now Saves $147,000 Per Year on Water Bills

(EDITOR'S NOTE: One NEHES member's very successful experience with water conservation is documented in the story below.

He urges other members to submit similar success stories in the case study format, because "it really is the best help we could possibly give each other."

Send stories or story ideas (if you'd prefer not to write the story yourself) to Steve Cutter, Newsletter Editor, via phone, (603) 650-7148, via fax, (603) 650-8978, or via email, Steven.D.Cutter@hitchcock.org.)

Since the very essence of why we participate in our state, regional and national engineering organizations is to exchange knowledge and experiences, I'd like to share a very successful venture with you. It's so rare that a service comes along that truly delivers what they promise, in an understandable and professional manner.

As you well know, almost daily we are visited, solicited, and even "stalked" by "energy conservation specialists" who want to charge you for re-lamping with new efficient lighting/ballasts, installing variable frequency drives, and rebuilding steam traps that work.

Well, we know how to do these things, yet it seems there are a myriad of organizations that thrive on doing just that. Maybe their success is with the colleges or smaller healthcare facilities that do not have an engineer in-house to know these basics, but surely, by now, we do.

Two years ago, when approached by such a vendor (selling water conservation), I was equally skeptical that they had nothing new, and I thought we had already done water conservation. My two mechanical engineers talked to H2O Matrix and became interested. I challenged my staff to obtain details of hard processes and definitive calculations of results, "NO BLACK BOXES." If they could be convinced, they could next convince me, and I would find the funding. Although we had already eliminated all water-cooled devices and changed out all of our flushometers to 1.6s, we were surprised to see the calculations of specific remaining measures that could be achieved with sound technology.

Fortunately, at that time, the "System" I was a part of (eight hospitals of varying sizes) was in the midst of efforts to focus joint activities and derive substantial operational savings. To this end, $2,000,000 was made available for the shortest return on investment among any of the partners that could prove an opportunity. At my facility I organized a committee of our in-house engineers as well as our lead maintenance staff to "leave no stone unturned." As a result, we went ahead with the H2O Matrix program.

We included the following areas and equipment in the water conservation program:

-19 gravity steam sterilizers
-2 vacuum sterilizers in the Central Processing Department
-4 Radiology film processors
-Radiation Therapy Linear Accelerators
-Dialysis RO unit reject water
-450 flushometers throughout public spaces in the facility
-30 automatic Optimal flush units for high traffic areas.

Just Left of Center

It Is Okay to Have Fun on the (Healthcare Engineering) Job!

By Greg Harubin
Director of Facilities Operations
Day Kimball Hospital
Puinam, CT

At times it is okay to have some fun on the job. Some people find healthcare engineering a stressful place to be and it is probably a good release to let that natural engineer's humor just pour forth!

Now, as we all know, engineers have a reputation for being a bit challenged in the humor department, but I want to be one who stands up and proudly says, "It ain't necessarily so." We just have to be more careful than most about the content of our humor, knowing full well that others can lack appreciation for how clever we can be.

I mean, few really appreciate the comic brilliance of the story about how Joe, the electrician on staff, wired the pump motor so it inadvertently ran backwards, and you know, it took a year to diagnose the real problem and boy-oh-boy was old Joe embarrassed. Ha, ha, ha, ha! So now you see what I mean!

Like the other day, I received a call from what sounded like a sales guy who started off with that obvious baloney about how he was so-and-so from so-and-so company (which you've never heard of) and how grateful he was that I inquired about his company. So you say, "Umm, so what does your company do?" and you find out it is not related to your work at all. Armed with that knowledge, you spring to the offensive with, "It was not I who inquired," only to learn that the guy had my card and he spoke with me at the P.D.C. Conference in Nashville where you've never been. So you see, being one of us, you next ask, "Did you have a drawing at your booth, or were you giving away anything free?" So it all becomes clear that your associate tried to increase your chances in the drawing, though you were not there at all. Now that's camaraderie! And boy-oh-boy, that guy really saw the humor in it all. Well, at least I had a good, old-fashioned chuckle!

So, I asked my wife of 25 years to read this thing I am writing and she looked up at me with that look, only confirming what I said before about that lack of appreciation. I'm beginning to think it is rampant.

I've got to tell you, I get the biggest kick out of my staff. They just seem to be more willing to see the fun in things. Each of them takes on their own personal role in the process. And naturally, I do all I can to promote this bad behavior. There is a thin line, at times, between laughing with me or at me, but what can I say? So what! Fun is great! And I am guilty of it.

(Editor's Note: Greg is a member of NEHES, ASHE, and CHES --Connecticut Healthcare Engineers' Society -- and a co-worker of Jack Gosselin, NEHES' liaison to ASHE. This is Greg's first published humorous story.)
Is It Time for Your Facility to Review its Water Usage?

Continued from page 3

Steam Sterilizer Condensate Tempering Retrofits
A patented (but understandable) steam condensate tempering system (CTS) was installed on various vacuum and gravity sterilizers throughout the medical center. The essence of this system provides a temperature-sensing probe that determines the very minimum water injection required to discharge the highest allowed condensate temperature leaving your sterilizers. This measure reduced 85% of our water use in sterilizers.

Vacuum Sterilizer Retrofits
Rather than running nine gallons per minute through a venturi to create vacuum, electric vacuum pumps (using minimal electricity) were installed on two vacuum sterilizers that develop between 27 and 28 inches of vacuum. Also, CTS kits were installed.

Film Processor Retrofits
Processor flow control units were designed and installed on film processing machines located throughout for four different departments within the facility, further optimizing water use.

Linear Accelerator Retrofits
Water was taken from the reject side of the linear accelerator heat exchangers and piped to the condensate receiver reclamation tank. It is then pumped to our cooling towers and used for evaporative cooling.

Reverse Osmosis Reject Water Reclamation System
Reject water produced in the RO process was piped to a reclamation tank in the building’s basement. It is then pumped to two different locations based on pressure. The first location is the building’s non-potable water supply. The second is the condensate receiver reclamation tank which is then pumped to our cooling towers and used for evaporative cooling.

Flushometers
Our flushometers were of standard "off-the-shelf" supply hose brand. H2O had performed bench testing and determined that tolerances were insufficient and actual readings varied up to 3 gallons per use. H2O provided their own "accurate" parts that consistently achieved the 1.6 gallons. Over the past 18 months, we have not experienced any greater amount of maintenance for toilet clogs.

Conclusions
The H2O Matrix water conservation program has reduced our water bill by 25%, saving 18 million gallons of water per year. At current Boston water and sewer rates, that equates to an annual saving of $147,000. The above measures have been in place for over 18 months and, after recent inspection, are all working properly.

We are all aware that our facilities vary greatly, not only in size but also in extent of occupant use as well as in the basic water and sewer rates we are charged. Any facility that has a substantial water use is certainly a candidate for review. H2O Matrix conducts a totally free review of your facility and reports "potential savings." If you express interest, they would then expand their review to a detailed study resulting in very specific, tangible conservation projects as I demonstrated above. Furthermore, once installed, if the measures do not produce the savings at least as calculated, H2O Matrix pays you back. That's pretty foolproof. They also have other ways of paying for their program if you don't have the capital.

The following is a tabulation of our facility's 12-month comparison of actual meter readings from the period prior to implementation to the immediate 12 months after implementation.

For more information contact Tom Muratore at H2O Matrix, (617) 574-1192.

<table>
<thead>
<tr>
<th>Month</th>
<th>PRE - H2O Matrix</th>
<th>After Implementation</th>
<th>Calculated Reduction</th>
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</tr>
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<td>4,845,919</td>
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<tr>
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<td>28</td>
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<tr>
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<td>31</td>
<td>7,640,427</td>
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<tr>
<td>September</td>
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<td>5,353,791</td>
<td>30</td>
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</tbody>
</table>

ANNUAL TOTAL: 69,667,767 52,998,82 -23.93%
Dedicated Maine Engineer Serves Profession at Three Levels

Ron Vachon is a dedicated Maine healthcare engineer who has taken his level of volunteer service ever higher over the years, from state chapter, then to NEHES, and, in recent years, to the healthcare engineering profession nationally as he continues to serve ASHE in yet another capacity. Formerly a charter member of the ASHE Certification Steering Committee, which developed and created a healthcare facility managers' exam, Ron was tapped again earlier this year to serve on the ASHE Membership/Leadership Committee in addition to his chapter and NEHES duties.

This committee, he explained, will foster leadership, provide effective advocacy on behalf of healthcare engineers, and improve communication through affiliation.

Ron's career in healthcare engineering began in 1981, when he joined the VA Medical and Regional Office Center (Togus, ME) as a staff engineer for what turned out to be a 17-year career there. His responsibilities included oversight of mechanical, electrical, and high tech projects, such as a major 100,000pph boiler plant replacement, a multi-million-dollar telecommunications project, a new clinical addition costing $40 million, and many renovation projects, averaging $500,000 to $1.5 million.

In his earlier years at Togus, Ron also obtained a BS degree in Industrial Technology from the University of Southern Maine.

In 1998, Ron moved to St. Andrews Hospital (Boothbay Harbor, ME) as its Director of Facility Management. At the 180,000-square-foot facility, Ron is responsible for Planning, Design, Construction, Engineering, Operations, Maintenance, Housekeeping, Safety, and Laundry. He has seen his organization become 4.5 times its physical size since he arrived, and he has played a key role in the design and construction of Maine's first Full Continuum of Care facility, St. Andrews Village.

Ron joined the Maine Healthcare Engineers' Society in 1996, becoming president for two terms beginning the next year. In 1997, he joined NEHES and is currently serving as 'MHES' representative to the NEHES board. Along with all the MHES members, he is helping to plan the NEHES 2001 Full Conference to be held in Maine. Ron highly recommends chapter, NEHES, and ASHE membership to other healthcare engineers. "I firmly believe that these affiliations not only provide excellent educational opportunities, but the networking that occurs between members promotes professionalism," he said. "The networking affiliation provides information to help us meet the challenges of healthcare today and tomorrow. These excellent organizations also offer an advocacy conduit of communication to NFPA, JCAHO, and other agencies. I really enjoy the people in the organizations. Hospital engineers by character are some of the nicest and most helpful people I know."

Ron and his wife, Dottie, live on the Maine coast in Wiscasset. Favorite hobbies include outdoor sports, traveling, and boating. Ron is probably one of the few - if not the only - NEHES members who can "commute" in his boat to his office overlooking the Atlantic Ocean. St. Andrews, he reports, is "the only hospital north of Norfolk, VA that is accessible by land, sea, and air because it has a deepwater dock and helo pad."

Albert Sunseri Replaces Joe Martori as ASHE President

By Jack Gosselin
ASHE Region I Director
Vice President of Facilities Management
Day Kimball Hospital
Putnam, CT

New Executive Director

With Joe Martori's resignation this past January as ASHE's Executive Director, a new director was selected in April. Albert J. Sunseri, Ph.D., former ED of the Association for Healthcare Resource and Materials Management, brings to ASHE 25 years of experience in the AHA and association management.

2000 Elections

Of the 10 ASHE Regions, five will hold elections this year for board positions whose terms will begin January 2001. Included will be Region 1 as I am finishing my second and final term on the ASHE Board. A nominating committee has provided candidates for this election to be held later this year.

The ASHE President-elect nominating committee has recommended the following candidates for 2001: William Anderson, FASHE; Wayne Kingelsmith, FASHE; and Bill McCullough.

Certified Facilities Manager

Through the AHA Certification Center, the CHFM examination will be offered starting this June. The 110-question, multiple-choice test will also be available for those seeking this new designation at the ASHE Annual Conference in Seattle in July. Information regarding this initiative is contained in the Candidate's Handbook and can be obtained by fax through the AHA Certification Center (312-422-4579) or ASHE's fax-on-demand (800-764-3294; Document # 431223).

Regional Chapter Updates

The Central New York Society of Healthcare Engineers held its monthly meeting in Syracuse April 11. Eugene Cable, VA Regional Fire and Safety Engineer, provided the educational component. The Community General Hospital in Syracuse hosted a May meeting. For CNYSHSE information, contact Mark Kaplan at (315) 476-7461.

The Hospital Engineering Society of Greater New York hosted its Annual Gala Dinner in Brooklyn in March. April's educational meeting was held at Mt. Sinai Hospital in Manhattan with a presentation on "sick building syndrome." HES will hold their 3rd Annual Golf Outing on July 31 in Somers. The President of HES is Joseph Zammit and can be contacted at (718) 567-1198.

CHES News

The Connecticut Healthcare Engineers' Society held a spring meeting in Greenwich June 8, with a description and tour of the recently completed New Greenwich Hospital. For information on this and other CHES events, contact Steve Carbery, (203) 863-3133.
NEHES Welcomes One New Member

Ken Waite, Manager of Environmental Services at Hillcrest Terrace Retirement Community (200 Alliance Way, Manchester, NH 03102), is NEHES’ newest member.


He was the Assistant Director of Plant Operations and Engineering Services at Wentworth Douglass Hospital (Dover, NH) and Director of Plant Operations at Frisbie Memorial Hospital (Rochester, NH). Following a relocation to work in a Georgia facility, he returned to New Hampshire and joined Hillcrest Terrace.

Ken is a member of the New Hampshire Society of Healthcare Engineers. He has served as its secretary/treasurer and as vice president.

Contact information for Ken is: e-mail, Kwaite@optima.org, and telephone, (603) 645-6500, Ext. 227.

ASHE Update continued from page 5

ASHE Web Page

The web site for ASHE has a new look and has been reconfigured. The information has been expanded and it has been enhanced for ease of use. The address is www.ashe.org.

Committee Assignments

ASHE maintains over a dozen active committees that develop and promote initiatives to our industry and our members. Members interested in being considered for a committee assignment for the year 2001 should contact ASHE’s president-elect, Curt Hibbard, at (208) 799-5654 or chibbard@sjmc.org.

ASHE Calendar

* ASHE 37th Annual Conference and Technical Exhibition, Seattle, WA July 10-12, 2000
* ASHE Codes and Standards Program, Chicago, IL August 27-29, 2000

For information regarding these or other ASHE programs or services, contact ASHE at (312) 422-3800 or visit the web site noted above.

For questions concerning regional ASHE activities, contact me at jgosselin@hnne.org or call (860) 963-6313, ext. 2353.

Engineers Like Leominster Location

Almost 90 NEHES members heard three specialists speak on the Spring Seminar theme of “Strategies for Addressing Compliance with NFPA 99, NFPA 101, and OSHA” March 28 in Leominster, MA.

The Seminar and all-day vendor exhibits were organized by the Rhode Island Healthcare Engineers’ Society and supported by seven vendors: American Electrical Testing, Hilti, Hughes Associates, Inc., RM Associates, Siemens Cerberus Division Pyrotronics, Yankee Fiber Control, and H2O Matrix, which sponsored the lunch.

The location of the all-day conference – Four Points Hotel Sheraton in Leominster – is proving to be a popular, centrally-located, and more affordable meeting place than in the past when gatherings were held in Boston. This is the third year that Spring Seminar has been held in Leominster.

Speakers were: Mr. Fred Malaby, Senior Industrial Hygienist, OSHA, Region 1; Robert Solomon, PE, NFPA; and Craig Kamps, NFPA.
Joint Commission Offers Relief for Inaccessible Dampers

By Robert J. Thompson PE, CSHM
NEHES Liaison to JCAHO
Fire Protection and Safety Engineer
Dept. of Veterans Affairs
Bedford, MA

Since 1993, NFPA 90A Standard for Installation of Air Conditioning Systems has required maintenance of fire and smoke dampers once every four years. As a standard referenced by the Life Safety Code, NFPA 90A is fully applicable to inspection, testing, and maintenance of existing systems.

Frequently, while conducting the required inspection, tests, and maintenance, some fire dampers have been found to be rendered totally inaccessible by added utilities. NFPA 101, Life Safety Code, paragraph 4.6.3 (2000 Edition) allows the Authority Having Jurisdiction (AHJ) to waive a requirement if compliance is impractical and if it is evident that a reasonable degree of safety is provided. Annex note A.4.6.3 further explains 4.6.3.

"4.6.3* Modifications of Requirements for Existing Buildings. Where it is evident that a reasonable degree of safety is provided, the requirements for existing buildings shall be permitted to be modified if their application would be impractical in the judgment of the authority having jurisdiction."

"A.4.6.3 In existing buildings, it is not always practical to strictly apply the provisions of this Code. Physical limitations can cause the need for disproportionate effort or expense with little increase in life safety. In such cases, the authority having jurisdiction should be satisfied that reasonable life safety is ensured.

In existing buildings, it is intended that any condition that represents a serious threat to life be mitigated by the application of appropriate safeguards. It is not intended to require modifications for conditions that do not represent a significant threat to life, even though such conditions are not literally in compliance with the Code."


This raises the question: Would it be acceptable to omit the testing of a damper, if the damper has been rendered inaccessible by significant obstacles, such as gas piping systems, additional ductwork, or other utilities if the relocation of these utilities would be highly impractical?

The answer given by the Healthcare Interpretations Task Force (HITF) in a ruling made in mid-May was, "Yes, if the AHJ is satisfied as outlined in 4.6.3 of the 2000 edition of the Life Safety Code."

Editor's Note:
If you have items you would like to include in this section, please contact Steve Cutter, Newsletter Editor, by phone (603) 650-7148; by fax (603) 650-8978; or by e-mail Steven.D.Cutter@Hitchcock.org.

Mr. Dean Samet, Associate Director of JCAHO’s Standards Interpretations Group, further explained that in its role as AHJ, the JCAHO has been permitting the omission of the test on a damper for some time now. The allowance is contingent upon:

- The facility inventories each damper that cannot be reached and
- The facility lists each damper that cannot be tested, and
- The facility commits in writing to resolve the inaccessibility issue when the area in question is renovated.

No other commitment to a time frame is mandated for this JCAHO (AHJ) approach.

This HITF interpretation will be published in the next few months, but you can begin using this information in your dealings with JCAHO.
NFPA Sets Fire Watch Guidelines for Sprinkler Shut-downs

By Eugene Cable, PE
NEHES Liaison to NFPA
Regional Safety & Fire Protection Engineer
Dept. of Veterans Affairs
Albany, NY

The NFPA 101 Life Safety Code: Section 7-7.6, states: "Where a required automatic sprinkler system is out of service for more than four hours in a 24-hour period, the authority having jurisdiction shall be notified, and the building shall be evacuated or an approved fire watch shall be provided for all parties left unprotected by the shutdown until the sprinkler system has been returned to service."

Sprinkler impairment procedures shall comply with NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.

NFPA 101 Section A-7-7.5 (the appendix is informational, explanatory material), states: "A fire watch should at least involve some special action beyond normal staffing, such as assigning an additional security guard(s) to walk the areas affected. These individuals should be specially trained in fire prevention, in use of fire extinguishers and occupant hose lines, in notifying the fire department, in sounding the building fire alarm, and in understanding the particular fire safety situation for public education purposes. Some authorities having jurisdiction require firefighters to be assigned to the area, with direct radio communication to the local fire department. Also, see NFPA 601, Standard for Security Services in Fire Loss Prevention."

There are at least 23 Code trade-offs for sprinkler protection for healthcare occupancies. In other words, there are 23 distinct Code requirements that would be in place except that sprinkler protection is so reliable and so effective that these requirements are waived. Two examples are: egress corridor walls need not be fire resistant nor do they need to extend to the floor slab above, and newly purchased upholstered furniture and mattresses need not meet institutional flame resistance standards. So, with sprinkler protection in place, almost everything from wall fire resistance to contents flammability to even staff training/drill readiness is reduced.

That explains why the Life Safety Code requires the building be evacuated when sprinkler protection is out of service for extended periods. The risk for disaster is substantial should a fire occur when sprinkler protection is impaired. The Code took the approach that a four-hour time period and beyond was the threshold for unacceptable risk.

Will your fire watch provide protection equivalent to occupants no longer in the building? Will your fire watch provide protection equivalent to the sprinkler system, a firefighter with hose-line in each and every room?

Certainly something less than a firefighter in each room is acceptable, but given the above considerations I would not want to be in a situation where I had to explain or defend the adequacy of my fire watch, especially after the fact. I have participated in several fire related litigation cases; they are nasty and very detailed.

Depending on the patient types/numbers/size and number of zones involved, an "Approved" fire watch in our VA Network is a person qualified as above with the sole duty of fire watch. Particularly when the exposure is large, i.e. a high-rise building, this person(s) cannot be a contractor who is supervising work, cannot be the project engineer, cannot be a nurse who is regularly assigned, cannot be the police person who was scheduled on duty anyway. An approved fire watch must be someone specially assigned beyond normal staffing. For example, the contractor hires a person for fire watch duty, or an additional police officer is assigned for the evening shift, or an employee performs no other duty but fire watch duties. Your local Authority Having Jurisdiction (AHJ) may be more or less stringent. You should definitely contact them for approval of your fire watch.

The Health Care Interpretations Task Group issued an opinion (number 98-3) accepting clinical staff as fulfilling this role, given there is "adequate staffing to continuously patrol the affected area." That might work for a shutdown affecting only a few zones, but certainly not a building-wide shutdown.

The bottom line is to never shut down sprinkler systems, but when you must, make sure the local AHJ approves your "Fire Watch."

<table>
<thead>
<tr>
<th>Time Down</th>
<th>#Zones Effected</th>
<th>Occupancy</th>
<th>Acceptable Fire Watch</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;4 hours</td>
<td>1 or more</td>
<td>All*</td>
<td>&quot;Additional Duty&quot;</td>
</tr>
<tr>
<td>4 to 8 hours</td>
<td>1 or 2</td>
<td>All</td>
<td>&quot;Additional Duty&quot;</td>
</tr>
<tr>
<td>4 to 8 hours</td>
<td>3 or more</td>
<td>All</td>
<td>1 person &quot;Additional Duty&quot; for every zone, OR</td>
</tr>
<tr>
<td>4 to 8 hours</td>
<td>3 or more</td>
<td>All</td>
<td>&quot;Specially Assigned/Dedicated&quot;</td>
</tr>
<tr>
<td>8 hours</td>
<td>1 or 2</td>
<td>All</td>
<td>&quot;Additional Duty&quot;</td>
</tr>
<tr>
<td>&gt; 8 hours</td>
<td>3 or more</td>
<td>All</td>
<td>&quot;Specially Assigned/Dedicated&quot;</td>
</tr>
</tbody>
</table>

* Covers all occupancies; e.g. vacant space, construction, closed clinic, storage, etc. This column remains in the table to acknowledge that type of Occupancy (people, activities and combustibles present) is a risk factor and when considered might give cause to modify "Acceptable Fire Watch."

** Additional duty: Normal staffing assigned the additional duty of fire watch. For example, as long as there is adequate staffing to continuously patrol the affected area, clinical staff can fulfill this role.

*** Specially Assigned/Dedicated: Specially assigned person(s) beyond normal staffing with the sole responsibility of performing fire watch duties. For example, hiring an additional Security Guard for he night with assigned fire watch duties only.
Measuring Exhaust Temperatures--A Method of Quantifiable Data to Detect Wet Stacking Conditions in Diesel Engines

(Editor’s Note: This article is reprinted with permission of Healthcare Circuit News and its editor, Dan Chisholm.)

The 1999 edition of NFPA 110, Emergency and Standby Power Systems, contains a substantial change in the procedure to check for wet stacking conditions present in diesel engines not being loaded sufficiently. The modification involves comparing exhaust gas temperatures with manufacturers’ recommended minimum temperatures. In contrast, readers will recall the wording in the 1996 edition of NFPA 110, 6-4.2 which stated that evidence of wet stacking was indicated "by the presence of continual black smoke during engine-run operation." From 1996 to 1999, we’ve progressed from using subjective visual assessment, to objective quantitative data. Clearly the approach suggested in the 1999 edition using exhaust temperature data will yield more objective information with which to determine if wet stacking exists.

Currently NFPA 110 requires generators to be tested monthly under a load that is at least 30% of the nameplate rating. The modification states that as an alternative to the 30% of nameplate requirement, it is allowable to test the generator with a load that “maintains the minimum exhaust gas temperatures as recommended by the manufacturer.” This change will be of particular interest to those facilities whose generators, for whatever reason, are unable to be tested consistently at the minimum 30% of nameplate level. To obtain the data necessary for this method, however, facilities will need to develop a system to accurately track exhaust temperatures, and in some cases, will have to convince manufacturers to cooperate by providing data regarding recommended temperatures in several locations on the piping downstream from the exhaust port.

To get started, there are a range of options as far as equipment for this procedure. On the high end side of the expense scale is a temperature probe unit, or thermocouple, embedded in some portion of the exhaust system or cylinder head which would send data automatically. Once installed, tracking exhaust temperatures would be a snap. The drawback to this system is the price: they’re rather expensive to retrofit - in the range of $500 to $2500 per engine. Another disadvantage is that their use is limited - recording temperatures for the specific location in which they are embedded.

For the rest of us, a less costly, and more practical option involves the use of infrared instruments (costs starting around $350). With this approach, however, the question of where to obtain the readings becomes the issue. The best place to get the highest readings is at the exhaust manifold-to-cylinder head connections which is closest to the combustion chamber where the manufacturer’s readings are taken. Unfortunately, these connections are not easily accessible on some engines, and attempting to obtain readings here may present a real threat to personal safety-and should be avoided. We recommend the safer option of specifying a location on the exhaust manifold where all exhaust ports empty their gases, and obtaining temperatures here each month. Since your specified location may be some distance from the combustion chambers, the temperatures you obtain will be cooler, and the data must be adjusted for this difference.

For example, a likely choice on some engines is at the turbocharger, where temperatures could be 20% cooler than those found at the manifold-to-head connection. If the manufacturer’s recommended exhaust gas temperature in the combustion chamber were 750 degrees F. at the 30% load level, and you were getting a 600 degree F reading at the turbocharger, you could assume that the engine was sufficiently loaded, since your reading came up 20% less than the manufacturer’s recommendation for the combustion chamber. The method works because the data obtained at this location directly correlates to the manufacturer’s recommended minimum temperatures--but you have to know what the exact correlation is - the difference in temperature.

The graph below shows the results of an actual test on a D399 Caterpillar. The bottom two lines represent temperatures recorded at the left and right turbocharger, and as the graph clearly indicates, they correspond closely to the top line which represents the manufacturer’s recommended temperatures at the exhaust port. (The slight differences between the right and left turbochargers may be an indication of a problem in one or the other which may have to be diagnosed.)

To use this graph to demonstrate that the generator is operating at an adequate temperature, it is necessary to have figures from the manufacturer specifying what the temperature should be at the turbochargers (or whatever location is used). Getting this information will be of critical importance to those facilities with generator(s) not being tested at the 30% of nameplate rating who are trying to take advantage of this alternative; however, given that this NFPA 110 change is new to all of us, manufacturers might not even have that data available. It may take some convincing on our parts, and commitment on their parts to make this method workable.

If a facility is unable to make the 30% of nameplate rating, and does not have the exhaust temperatures that demon-

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**Generator #4**

![Graph showing exhaust temperature measurements at different percentages of nameplate load.]

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Read This for JCAHO News about Fire Drills, Busted PFI, and EOC

By Robert J. Thompson, PE, CSHM
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Fire Protection and Safety Engineer
Dept. of Veterans Affairs
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Improved Fire Drill Rules

Standard EC.2.10 for fire drills will be changing effective July 1, 2000. This change will be announced in JCAHO Perspectives very soon, according to Dean Samet, Associate Director, JCAHO Standards Interpretation Group.

The change to EC.2.10 will require that (new text italicized):

"All personnel of all shifts in all areas of every building where patients are housed or treated shall participate in fire drills to the extent called for in the facility fire plan. All fire drills are critiqued for the purpose of identifying deficiencies and opportunities for improvement. All personnel are trained in fire response according to the facility plan. The effectiveness of this training shall be evaluated at least annually. The training shall include general facility protocols and all aspects of response that may be unique to the individual's duties and work site.

"At least 50% of the required drills are unannounced," reads the added text. However, "Performance of all areas during fire drills is evaluated" has been deleted, as has Note 2 regarding observing certain areas of the building.

Mr. Samet gave an example. A person who works in the retail shop of the hospital would typically not be expected to react to a fire alarm originating in another floor of the hospital. Critiques will not address that person's inactivity in the event.

What this means for you is that the implementation of this standard will become more flexible, more goal oriented, more facility specific and, therefore, more relevant.

Do You Have a Busted Plan For Improvement?

A "busted PFI" means that you are on the verge of Conditional Accreditation -- normally. It occurs when an accredited facility has failed to keep its contract with JCAHO to correct its Life Safety Code deficiencies within the self-imposed schedule of its Plan for Improvement (PFI).

The Joint Commission allows a grace period of up to six months beyond the facility's original committed dates to complete correction of deficiencies in the Plan for Improvement -- without penalty. The six-month grace period does not apply to approved extensions.

If, during the grace period, it becomes obvious that an item will not be corrected within the initial grace period, then a formal request for a reasonable extension of the plan can be submitted to JCAHO ("reasonable," or not excessive, given the scope of work). The request must be approved and on record prior to a survey, including an unannounced survey. In that case, the revised date becomes the new timing for the "contract," and no penalty will be experienced. If the six months is exceeded on an original PFI and there is no pre-approved extension on record, a finding of inadequate progress in completing the PFI, per Hospital Accreditation Survey Rule #19, will be reported. In addition, a Type 1 deficiency of EC.1.1 and Leadership and conditional accreditation will likely be recommended.

But, we're told that JCAHO is even more reasonable than that!

If, even beyond the original six-month initial grace period, an extension is requested and it is approved prior to a survey, a facility will not receive a recommendation. But, beware! In the absence of a pre-approved extension at any time after the grace period, you should expect a surveyor to recommend a Type 1 deficiency and conditional accreditation. Such a gamble would be risky, particularly in these days of unannounced surveys.

Environment of Care No Longer Among Top Ten Recommendations

During the interview with Mr. Samet, it was learned that in recent JCAHO accreditation surveys, EC standards no longer rank among the top 10 for Type 1 recommendations in hospitals. Mr. Sametattributes this to the effectiveness of the Statement of Conditions process and to improved staff training.

Measuring Exhaust Temperatures

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strate the generator is sufficiently loaded, an annual supplemental "load run" will need to be performed. As stated in NFPA 110, 6.4.2.2, "diesel-powered EPS installations that do not meet the requirements of 6-4.2 shall be exercised monthly with the available EPSS load and exercised annually with supplemental loads at 25 percent of nameplate rating for 30 minutes, followed by 50 percent of nameplate rating for 30 minutes, followed by 75 percent of nameplate rating for 60 minutes, for a total of 2 continuous hours."

While the monthly test loading of a generator above the 30% level is not required by NFPA 110 beyond the above circumstances, we recommend loading the generator to 75-100% of the nameplate "on occasion" to benchmark exhaust temperature readings starting at a no load level. The graph is a record of such a test. Note the test data begins at a no load level and progresses to 100% of the nameplate, with data recorded at various increments along the way. You can "ramp up" the generator using facility loads, a load bank, or a combination of both. Records of such tests can be invaluable as a preventive maintenance tool. These records can be useful in overall engine maintenance; comparing them over time can indicate problems with the condition of other engine parts - like valves, injectors and rings.

Exhaust manifold temperature data can provide a very accurate picture about the condition under which an engine is running. Readings that are too low - after adjusting for the temperature differential between the combustion chamber location the manufacturer used for their recommendations and the location the facility chooses to obtain their data - can be a clear indication that wet stacking conditions are present, and appropriate action can be taken to alleviate the problem.

1 See NFPA 99, 3-4.1.1.5, for details concerning the powering of non-essential loads

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Questions or Comments
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