THIRD QUARTER SEPTEMBER 1988

NEW ENGLAND HOSPITAL ENGINEERS SOCIETY Newsletter

PRESIDENT’S REPORT

As I look back at the past eight months that I have been President, I wonder where the time has gone. If your hospital is anything like mine, it has been an extremely busy year. As NEHES President, I have had the opportunity to visit with many hospitals across New England. The message seems to be very clear; most hospitals are in non-stop construction, with more and more projects being accomplished with in-house maintenance and construction crews. One could argue either way for the advantages or disadvantages of in-house construction. The most common problem is that it usually takes longer, but the trade-off to that is, it costs less. In my opinion the most significant advantage is that at the completion of each project your staff has gained a greater knowledge of the overall mechanics of the hospital. I believe that there is a lot to be said for in-house construction and that it will continue to have a significant impact on the type of people that we are seeking to employ.

The disadvantages of hospital based construction are more noticeable when we rely on the general maintenance staff to support both roles. This situation is less than ideal but in many cases ends up being more of a reality and is more predominant in small settings. This situation isn’t all bad. First of all you must realize that the need for non-skilled general maintenance labor is almost non-existent. Each position must be viewed with specific skills in mind, and individuals who meet these requirements need to be found. When someone calls down from the laboratory and says their blood gas machine isn’t working, or the telemetry in the ICU step-down units are acting funny, or the central air conditioning is down, this is the time when it is tough to be both a construction department as well as a skilled maintenance department. If you haven’t got the right crew, this is when it shows up.

Another disadvantage of trying to be both a maintenance and construction department is that we tend to forget what we are really here for. First, we must maintain what we have. If the everyday maintenance isn’t getting done then we should not be in the construction business.

There are no easy answers, but with the cost of outside labor continuing to rise we can probably look forward to expanding our skilled labor to satisfy general construction needs. At the same time, technical advances in all departments require a whole new approach for the engineering department. If you have been looking for skilled mechanics, you have probably noticed that they are hard to find. Our profession is not unique to hospitals and must compete with the for-profit market for the same labor force. If we want to have quality workmanship we need to understand that is comes with a price tag. We have not seen a lot of changes in nursing and other technical staff throughout the hospital, and as managers of engineering and maintenance we are responsible for providing quality maintenance at all levels of technology. This can only be done by constantly up-grading the skills and ability of our staff. The message that we must get across to our workers is that if we successfully satisfy those needs, we will be recognized.

Theron Manning 1988 President, NEHES

FALL SEMINAR REMINDER

OCTOBER 11, 1988
8:30 a.m.
TARA DUNFACY HYANNIS, MA

NEW NEHES REPRESENTATIVE TO ASHE BOARD

Congratulations to John Crowley who was recently elected to the ASHE Board as Representative of NEHES in Region 1.

NOMINATING COMMITTEE

Once again it is time to nominate a slate of officers for the coming year. If you are interested, or would like to suggest a name of an active member that should be considered for the treasurer position, this is the time that we should hear from you. The nominating committee consists of: Dick Popham, John Crowley, Ed Boyer, Percy Hanscom, David Hathaway, Paul Taylor, and is chaired by our current president, Theron Manning.

HOW WOULD YOU EVACUATE A HOSPITAL?

WJR, the highly rated radio station for the Detroit area, had a reputation for accurately predicting the weather. On July 10, 1987 only 1/4" of rain was predicted for that afternoon. The only concern most employees at Garden City Hospital had that day was getting wet while running to their cars.

Ben Duckworth, Vice President at the hospital, was in a meeting on the 1st floor and knew it was raining outside. What he did not know was that instead of getting the 1/4 inch of rain as predicted, 4.57 inches would dump on the area in a short span of 35 minutes with heavy lightning and thunder accompanying it. He noticed the lights blink and looking out of the window he saw the emergency generator running. It was the beginning of an internal disaster that could happen to any health care facility, but one that is extremely difficult to prepare for: total hospital evacuation.

The 8 inch storm drains in the parking lot of Garden City Osteopathic Hospital were, under ordinary circumstances, large enough to carry away the water. It wasn’t so this Friday afternoon. Two service doors with an inclined drive leading from them were located approximately four feet below grade. An area of the parking lot which is about 50 feet by 120 feet with a 30 degree slope from a hill was adjacent to the service doors. Unfortunately, the 8 inch storm drain serving the area was plugged causing a massive amount of water to back up against the doors. As the water rose the doors buckled under the pressure and water poured into the boiler and mechanical equipment rooms. Motors to boiler feed pumps, domestic hot water and booster pumps, and the main transformers were the first to short across the windings causing fuses to blow everywhere. The emergency transfer switches transferred the load to the generators but they also quickly became flooded and were lost. Within minutes the hospital sat like the ghost ship Flying Dutchman, dead in the water without any mechanical or electrical services.

Bob Towas, Assistant Director of Engineering recalls it as being the worst possible nightmare come true. “We didn’t have anything. We lost main and stepdown transformers, power everywhere, elevators, lighting, you name it. All of the booster pumps were out and we couldn’t even get water to the floors. It became evident pretty quick that we couldn’t recover in a short length of time. We had to evacuate the patients from the building. I let Administration know what the status of our equipment was and they made the decision.”

Westland Medical Center had 2 units closed due to low census and arrangements were made to move the 80 or 90 patients into their vacated wings. Moving patients on litters and stretchers down stairways, the evacuation took about 24 hours.

“There were a lot of heros that day,” said Duckworth, “but the one that stands out in my mind was Mitchell Nemmoor, our Personnel Director. He sent every person he could find cut into the surrounding area to either beg, buy or rent every portable generator available. We had them running everywhere. If someone had wanted to buy a flashlight or batteries they would
have been hard pressed to find any; we cleaned every hardware and department store out and had them here."  
Every facility probably is vulnerable to some type of disaster in one form or another. It could be due to the weather, engineering design or even the geographic location relative to landscape or other industries. Tampa General In Tampa, and Palms Medical Center of Pasadena, also in Tampa, along with several other hospitals, elected to evacuate their facilities when Hurricane Elena sat near Cedar Key in the Gulf of Mexico in 1985. With a full moon and the tides higher than normal, all but the most critical patients were evacuated as a precautionary measure. Under these conditions, the hospitals, and indeed the entire area, was particularly vulnerable to severe damage.  
Even the best laid plans can go awry but every health care facility should have a policy to designate what steps should be taken to evacuate patients. The following are questions and suggestions for formulating or amending an evacuation policy:  
1) How could the policy be implemented? One suggestion is to activate or design a policy around your external disaster plan. It is the quickest method of assembling all key personnel in the hospital.  
2) Be sure to have other policies in place that will work to provide temporary services such as sources for portable generators, temporary direct outside phone lines, messenger service, etc.  
3) Coordinate with outside agencies a plan for transportation. All EMS services will need to be notified that Emergency room services are no longer available. In addition they will be called upon to transfer patients to other facilities. Coordination is necessary so that the entire community is not left unprotected during patient transfer.  
4) Select an area where the Medical Staff and Nursing can triage patients. A mechanism is necessary to not only track where the patient and medical records are going but also, how do you bring them back?  
5) Someone must communicate with other hospitals to determine which facility is able to accept which patient. Also, will additional staff be necessary due to the burden the receiving hospital is accepting. Are additional supplies necessary?  
6) Pharmacy must be responsible for securing all controlled drugs and records.  
7) Social Services should be responsible for explaining the evacuation procedure to each patient. It is also necessary for them to notify family members of patient destination. As this is usually a small department it will be necessary to draft additional personnel for this function.  
8) Have an emergency phone list located in the policy itself instead of a phone directory. It is a good idea to list all applicable phone numbers in each policy of your internal disaster manual. As part of your preventive maintenance program, update and verify the phone numbers annually.  
9) Decide beforehand in what order the evacuation process will be and designate an individual to ensure the priorities are followed as closely as possible.  

The process of evacuating a hospital can be very complex and costly. (Garden City Hospital lost over 3 million dollars in the 7 days they were closed). In developing an evacuation policy it is important to receive input from all those involved.  

INCINERATOR STUDY  
Vincent Gardner was given a study of hospital incinerators prepared by the RADIANT Corporation, dated October 1987. It is a good overview of three types of incinerators and their advantages and disadvantages (Excess Air, Controlled Air, Rotary Kiln). I was surprised to find that over 90% of operating hospitals have on-site incinerators. In New York about 60% of these run at a rate of up to 200 lbs/hour.  
The report contains an excellent account of the chemistry of combustion, but you need to understand college-level chemistry to make sense of it. Chapter five on the report is concerned with regulations regarding hospital emissions. The federal government has not addressed this issue yet, due to the small units involved, but more and more states are limiting emissions and it appears they will tighten up their regulations.  
The following is quoted from the report: "The State of New York has drafted operating guidelines for hospital waste combustion which require stack emission limitations for particulate matter, carbon monoxide, hydrochloric acid, and visible air contaminants as well as continuous monitoring and recording of temperature in secondary chamber showing exit temperature of at least 1800°F. New York State generally requires emission tests for priority pollutants plus 10 toxic air contaminants (including dioxins). In addition, the State requires demonstration of compliance with acceptable ambient air quality levels for toxic air contaminants (or acceptable risk assessments for carcinogens)."  
It is my impression from reading this report that states are going to require our incinerators to have the latest available technology. This will cost a lot of money and there is no guarantee that they will not continue to raise their standards as technology advances. We will need to be prepared for this to happen.  

David Hathaway  
Lawrence Memorial Hospital  

NEWSPAPER ARTICLE  
The hospital engineer "wears many hats" during the course of the day and it was no surprise that a new one appeared recently that some of you may be involved with. Its called Title III - Emergency Planning and Community Right-To-Know Act of 1986, also known as SARA.  
The following paragraphs are an excerpt from a local newspaper describing how one of our member hospital engineers is involved.  

CITY PETITIONS LOCAL BUSINESS ON HAZARDOUS CHEMICALS  
Peabody's Local Emergency Planning Committee is currently in the process of collecting information on hazardous chemicals as the committee works towards its October 17 due date for a submitted plan to the federal government. A federal law enacted in October of 1988 requires "all communities to draft a plan for dealing with incidents involving hazardous material," said Jack Berger, chairman of the committee.  
A major component in establishing the city's emergency plan is finding out which local businesses have hazardous chemicals in high quantities (outlined by the federal government) and what measures they have for dealing with emergencies. Berger said that the committee sent letters to over 100 local businesses ranging from hardware stores to large manufacturing plants, to find out "which businesses have certain chemicals, meeting a certain threshold, that might be reportable under the law."
Once chemical specifics are compiled, the committee will design "facility profiles" on each company. A list of chemicals in question, an evacuation plan, and on-site coordinators is just the beginning of the profile. A map of the immediate area around the site, will highlight nursing homes, senior citizen projects, schools, or other special need facilities." Also included will be a list of equipment that the business has on hand to deal with a spill or fire. A copy of each company's Material Safety Data Sheet (MSDS) will be added to the profile and given to the fire department.

The MSDS, Berger explained, was derived out of the "right to know" act that was mandated into law several years ago. The MSDS was designed to provide information to employees about the chemicals that they work with or around.

Of the process that the city has followed, "I think the federal government set up very good guidelines. There is not too much thinking about what to do, (the work) is just getting it all done." Berger also praised Peabody Mayor Peter Tongian, a member of the Local Emergency Planning Committee, for his "key role in the goings on. Tongian's attendance at all meetings not only shows his personal interest, but lends a certain amount of credibility to the work of others involved."

The federal law requiring communities to establish emergency plans targets October 17, 1988 (two years from the date the law was enacted) as the due date for submission of the plans.

Submitted by Jack Berger J.B. Thomas Hospital

CHRISTMAS PROJECT

Since 1983, Mercy Hospital's Engineering Department has made over 200 beautifully crafted Christmas toys for area children. Averaging approximately 50 toys annually, the proceeds from each set of toys have gone to needy organizations selected by the volunteer toy makers. Over $1000 has successfully been raised every year.

Between four and eight engineering employees have annually volunteered their time after work to patiently craft and piece together the wooden toys. A different design is set every year and each volunteer puts in about 40 hours before the toys are made.

All toys have sold out within the first few weeks they were available. The main reason for this is because the quality and workmanship is of such high standards. All wood is bought in the rough and planed by the engineers. A well-equipped carpenter shop also helps to ensure top quality in every toy. All necessary tools are readily accessible, including planers, jigsaws, and electrical equipment. And because they are made out of solid wood, they are likely to last from one generation to the next.

The projects were done primarily for two reasons: improving employee relations and helping people out. Everyday, employees are required to come in and work together if they want to get a paycheck, but this project was different because it was done by choice, and when people volunteer for something together, they tend to get along much better too.

The toy makers acted very positively with each other while crafting the toys. The atmosphere was more casual and relaxed. I was able to work with the men on their own level, and we joked with each other a lot more than we normally do. Another important thing is that we learned from each other. By the end of the sessions, the mechanics picked up quite a few skills from the carpenters. It worked out very well.

And of course, at Christmas time, people like to do something nice for someone else. It's a good feeling to know that you can help people who really need it.

The proceeds from last year's hobby horse were dedicated to the new playground at the hospital's recently renovated Day Care Center. The sale of wagons the year before benefited the Teenage Mothers Program at Our Lady of Providence Children's Center. In 1985, proceeds from the wooden trains went into a Speech, Hearing and Language Center for the children of families who could not afford hearing aids. Hobbie horses were made the previous year and helped out both the young and the old at the Mt. St. Vincent Nursing Home and Our Lady of Providence Children's Center. The trucks in 1983 raised funds for a Christmas party and toys for the Pediatrics Department.

Money for materials is set aside in a special fund each year that is used toward the buying of materials for next year's design. For 1988, the Engineering Department is going to build a swing chair, made out of solid wood, and designed to seat two children.

Lou Rossi
Director of Facilities
Mercy Hospital, MA

Giselle ten Hornnel
Public Relations Specialist
Mercy Hospital, MA

SUPPORTING THE POWER COMPANY

Our utility company requested that we either generate some power or make a fixed reduction of load, and although I wasn't sure we could gain anything by it, I agreed to help. I ran only two of our four generators, shut down two of our six elevators, and tried to reduce lighting as much as possible. When I made chilled water with steam I had to contend with a power reduction of about 13%, and I could only produce 52% water when I needed 42%. Emergency generators are not usually fully loaded so with a 400 kw capacity I was only generating 130 kw. This represents only a very small savings for the hospital as the return of $0.20/kw barely pays the bill. However, when I needed the utility company to come in at 4:30 a.m. to disconnect the 4160 v feeder for a contractor, there was no charge, so one hand washes the other.

David Hathaway
Lawrence Memorial Hospital

REMINDER REGARDING MEMBERSHIP DUES

This is a reminder for those who have still not paid their dues. A deadline has been set for dues to be paid by October 30, 1988, or your name may be dropped from the membership list. Dues are $20.00 and payment should be sent to:

George Hawley
Hebrew Rehab Center
1200 Center Street
Roslindale, MA 02131

If you have any questions, please call 325-8000, ext. 260.

HISTORICAL NOTE

NEHES has an active history spanning a period of over thirty years. In 1958, sixty engineers from New England hospitals held their first meeting in Boston and voted unanimously for acceptance of a regional hospital engineering society. The goals of the Society, its activities, and the selection of their emblem were declared through a collection of ideas and co-operation in a conscious and spirited manner.

NEHES endeavors to promote better patient care through mutual exchange of ideas and experiences, professional development by use of continuing educational programs, and effectiveness and efficiency through use of the latest technologies.

JOB OPPORTUNITIES

Several positions are currently available. If you would like further information, please call Theron Manning, Gifford Memorial Hospital, VT, (802) 728-4441.

ARTICLES FOR NEXT NEWSLETTER

Please be thinking about your contributions to the next Newsletter. It would be appreciated if you could send articles typed and proofread.

STATE REPRESENTATIVES — Please note that with the exception of Vermont, we did not receive any articles from you. Please plan to have your news and items of interest ready in good time for the next Newsletter.

Deadline for submission of articles is November 25, 1988.
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