Dear Members & Guests:

More blue skies are coming everyday now that we are officially in spring. A time that nature reawakens around us. A time for ASSE members to rejuvenate their minds and participate in this month’s ASSE/ASPE meeting. When you think of sunny skies, the first thing that comes to mind is solar. Just so happens we will have Michael DiPaolo with Regasol USA as our speaker. He will be giving a presentation on solar water heating with evacuation tube technology. This is a natural resource that is virtually untapped in this region and a technology that is here to stay. Come out and see what it’s all about. The evening would not have been possible if it wasn’t for our sponsors, Paradigma and LPI Controls, putting this event together.

I want to thank all our members and guests that attended last month’s special meeting. It was quite an event. As expected, we had the record attendance that would be the case if you have a panel discussion of speakers from the NYC DOB and Code Committee representation. We offered to our attendees the opportunity to ask questions to the panel. We will be forwarding them to DOB and will provide responses as we get them. As we stated in the past, ASSE is here for you. We have an email for your convenience that is available for Plumbing & Fire Protection questions as it pertains to the new codes. Please send us your questions to NYCPumbingQuestion@gmail.com.

2010 ASSE/ASPE Societies Meeting Schedule

<table>
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<tr>
<th>Date</th>
<th>Speaker</th>
<th>Topic</th>
<th>Sponsor</th>
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<tr>
<td>Apr. 7</td>
<td>Michael DiPaolo</td>
<td>Solar Water Heating with Evacuation Tube Technology</td>
<td>Paradigma and LPI Controls</td>
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<td>May 5</td>
<td>Mark Allen</td>
<td>Energy Saving Technologies for medical Air &amp; Medical Vacuum Systems</td>
<td>Beacon Medaes and Sherman Engineering Co.</td>
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<td>Jun. 2</td>
<td>Harold Mermel</td>
<td>Acid Neutralizing Systems</td>
<td>PEP and Town &amp; Country</td>
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<td>Sept. 1</td>
<td>Guy VandeVaart of Empire Solutions</td>
<td>High Pressure Water Mist Fire Suppression Systems</td>
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<td>Oct. 6</td>
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<td>Nov. 3</td>
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<tr>
<td>December</td>
<td>Holiday Social</td>
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If you’re an ASSE member, you might have noticed that the New York chapter was premiered in a new feature in the March issue of the national publication "Plumbing Standards" called Chapter Spotlight. The article is a window of our chapters past, present and future. Our chapter is quite proud of the work we have accomplished so far and will continue to move forward for our members. A big part of our success has been our new and improved newsletter. It was a year ago this month that our first issue came off the press as an 8 page newsletter. Look at us now. I can’t praise Tom DiPietro and his lovely assistant Genny Rodriguez enough for putting us back on the map.

We look forward to seeing you all at our next meeting. On behalf of the ASSE chapter, we want to wish everyone a Happy Holiday to all and their families.

Dominic Agostino
ASSE President

The ASSE Bulletin is a publication of the New York Chapter of the American Society of Sanitary Engineering. The Society or Chapter assumes no responsibility for any advertisements, statements by any officer or member which may be construed as an approval or disapproval, or official position of the Society, of the material contained herein. Local Chapters are not authorized to speak for the Society.
American Society of Sanitary Engineering
FOR SANITARY AND PLUMBING RESEARCH
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Tel: (440) 835-3040 FAX: (440) 835-3488
www.asse-plumbing.org E-MAIL: membership@asse-plumbing.org

“Prevention Rather Than Cure”

ASSE is a non-profit, standard developing association accredited by the American National Standards Institute (ANSI) and National Institute of Standard and Technology (NIST). Our society was founded in 1906 and is one of the oldest engineering societies in the United States. We are here for the purpose of promoting public health through better plumbing and sanitary research.

Members of ASSE belong to an organization represented by all segment of the plumbing and fire protection industry, forming a platform to receive, understand, and solve industry problems related to Code, Engineering, Contracting, Sales, and Business. It is through the support and involvement of our members that we as a society continue to grow. We encourage you to become involved in our chapter and national activates. Whether you volunteer on a committee, plan a chapter event, or are a guest speaker at our next meeting, your involvement is essential to ASSE’s future.

Here are some of the privileges you enjoy as an ASSE member:

- Discounts on all ASSE publications (members’ number is required).
- Free subscriptions to Plumbing Standards Magazine.
- Free technical assistance.
- National awards, including the Quarter Century Award, the Fellow Award, and the Henry B. Davis Award.
- Networking with all segments of the plumbing and pipe fitting industries.
- ASSE members and their relatives are eligible to receive the ASSE National Scholarship.
- ASSE members are eligible for nomination to the position of Director, which brings a long with it industry recognition.

Now is the time to plan ahead and get involved in ASSE. Working together, we can achieve our goals for greener and safer plumbing and fire protection. Remember our motto, “Prevention Rather Than Cure.” This is an opportunity for you to invest in your future and grow and become a leader within the Plumbing Engineering Community.

If you have any questions or concerns regarding the above information or about how to become an ASSE member please feel free to contact our membership committee chairman at gdipietro@syska.com and we will be happy to assist you.

Within this bulletin you will find an ASSE Membership application. Fill out the application form and include your check made payable to A.S.S.E and mail it to American Society of Sanitary Engineering P.O. Box 20111, Greeley Square Station, New York, NY 10001.
ASSE NEW YORK CHAPTER MEMBERSHIP APPLICATION
(PRINT OR TYPE)

□ Mr.  □ Ms.
First Name ______________________  Middle Initial __________________  Surname __________________

Check Applicable Title:  □ P.E., □ Engineer, □ Designer, □ CADD Drafter, □ Master Plumber, □ Plumber, □ MFR, □ MFR’s Rep, □ Construction Eng., □ Govt. Agency, □ Contractor, □ Other (Explain) __________

Check if Desired:  □ I would like to be considered for a one year Director’s position in the Society.

REGISTRATION (P.E.):
State: _____________________________  Certificate No. _____________________________  Branch: ______________________________

Home Mailing Address _____________________________  City ______________________  State _________  Zip__________

Home Phone ( ) _____________________________  Fax ( ) _____________________________  E-mail _____________________________

Company Name ________________________________________  Business Address ____________________________________

City ______________________  State _______  Zip__________  Phone ( ) _____________________________  Fax ( ) _____________________________

E-mail _____________________________

EDUCATION:

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Applicant:
I certify that all statements made herein are correct. I agree that if admitted to the Society, I will be governed by its rules as long as my membership shall continue; and that I will promote the objectives of the Society and plumbing engineering profession.

Signature of Applicant _____________________________  Date _____________________________

Make check payable to:
American Society of Sanitary Engineering

Forward to:
American Society of Sanitary Engineering
901 Canterbury Road, Suite A
Westlake, OH 44145-1480

Sponsor: _____________________________

Submit Membership Dues with Application

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Payment: (Check One)
□ Enclosed is my check payment payable to ASSE.

□ Please invoice me for membership ($5.00 service charge added).

*With proof of employment by a Federal/State/Municipal or County Agency.
+ First year active membership.
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Minutes of Meeting

ASSE/ASPE March 2010 Meeting Minutes
Submitted and written by: Salvatore S. Rachiele

Minutes from the March 3rd, 2010 meeting of the NYC chapter of ASPE and ASSE.

6:10 Meeting opened and ASSE President, Dominic Agostino welcomed everyone. June 12th is a joint ASPE/ASSE fishing trip, Princess Marie in Point Lookout, Long Island; led by Steve Silver. We started the round table discussion with 4 topics. The four topics that were addressed are:

- An outline of the major differences between the 1968 and 2008 Code with respect to fire protection.
- An outline of the requirements for secondary water supplies, and fire standpipe requirements of the 2008 Code for high rise buildings.
- Clarification of a supplement to the 2008 Code will be issued to address fire protection systems designed and installed under the 1968 Code and requiring modification under the 2008 Code such as major tenant renovations and the implementation of LL#26/2004 – Installation of Sprinklers.
- Clarification of requirements for Group B Occupancies will be added in Section BC903 in a future update and advise what additional items will be added to the next Code update.

6:20 For those with additional question, you can e-mail to NYCPlumbingQuestion@gmail.com. Leon Perkolaj thanked everyone for coming and our sponsors, Potter Roemer & Tyco. All questions asked and responded to, will be posted when responded to. The panel was as follows:

John Lee – NYC Department of Buildings
John Bower, P.E. – Abco Peerless Sprinkler
Bert Stipe – Quimby Equipment Co.
Philip F. Parisi Jr., P.E. – Jaros, Baum & Bolles

The sprinkler requirements are not vastly different between the 1968 and 2008 code. There were some occupancy groups where the 1968 code required sprinklers in the spaces of those occupancy groups only. In the 2008 code there are occupancy square foot size thresholds that not only required that spaces in those occupancy groups be sprinklered but the whole building be sprinklered when those occupancy groups exist. Some examples of these are Group “F” occupancies for the fire area exceed 12,000 sq.ft. or where the Group “F1” area is located 3 or more stories above grade or where the total of all Group “F1” areas exceeding 24,000 sq.ft. not only do the “F1” group areas have to be sprinklered but the entire building has to be sprinklered. Similarly, Group “M” occupancies with mercantile, which exceeds 12,000 sq.ft. on any one floor or where a total of all group areas exceed 24,000 sq.ft., the entire building has to be sprinklered. Similar criteria exists for Group “A” occupancies. The group area itself and all floors between the Group “A” occupancy and the level of discharge have to be sprinklered not just the Group “A” area itself. Group “H” occupancy is high hazard, Group “S” occupancy is storage occupancy; if they exist the whole building has to be sprinklered. As a note, the reference standard now used for 2008 code for sprinklers is NFPA 13 2002. A version edition 13 years later than what was in the most recent reference standard to the 1968 code. Combined sprinklers/standpipe systems which are limited to certain occupancy groups in the 1968 code are not allowed in all occupancy groups except “H” which is a high hazard occupancy group that we see very little of in NYC.

Secondary water and auxiliary water supplies for high rise buildings: there is a requirement in the sprinkler portion of Code 903, which requires secondary on-site water supply for the sprinkler demand including the hose stream allowance. That hose stream allowance is the allowance in the table of NFPA 13 for high riser buildings, in seismic design category “C” or “D”. Each water supply is not in addition to that required for the standpipe system. If you do have an auxiliary water supply by virtue of the building being

THE SOCIETY ASSUMES NO RESPONSIBILITY FOR ANY STATEMENT OF ANY OFFICER OR MEMBER WHICH MAY HAVE BEEN CONSTRUED AS AN APPROVAL OR DISAPPROVAL OF ANY METHOD OR APPLIANCE UNLESS SUCH APPROVAL OR DISAPPROVAL HAS BEEN SANCTIONED BY RESOLUTION OR ACTION BY THE BOARD OF DIRECTORS.
taller than 300’, you don’t have to have a second secondary water supply for the sprinkler demand. You just have a single secondary water supply, not a second secondary because its seismic Group “C” or “D”.

Standpipe requirements; Manual pumps are no longer required. Secondary or auxiliary water supplies are required for all buildings for occupied floors located more than 300’ above the lowest level of Fire Department vehicle access. If you have looked at the code you know that the term “lowest level of Fire Department vehicle access” is mentioned a lot. If a building is located on a hill and if the Fire Department can access the building from the bottom of the hill, then that is the lowest level, not necessarily the entrance level which may be on top of the hill.

In the 2008 code, all buildings with a floor height more than 55’ above the “lowest level of Fire Department vehicle access” having an occupancy level of 30 or more are required to have both standpipe and sprinkler. The water storage requirement for tanks in 2008 code for standpipes is essentially per NFPA 14 requirements. The reference standard modifications were made to NFPA 14 2003. There is one exception to that rule that is for R2 buildings where the water supply requirement is capped at 500 gallons per minute. With storage requirements based on 30 minute duration is capped at 15,000 gallons regardless of the number of risers in the building where as otherwise the requirement is 500 GPM for the first riser, 250 GPM for each additional riser up to 1,000 GPM maximum in a fully sprinklered building and 1,250 GPM maximum in a non-fully sprinklered building.

For your convenience, the DOB website has a chart that lays out the code requirements.

You can also search in bulletins.

Building bulletins are located on the DOB website left hand side navigation there is “Reference Materials” and if you expand that it opens a menu to a sub-navigation menu building’s bulletins.


If you go to Appendix Q you will notice that when you reach 500’ ft. on a high rise building you are able to use a primary supply from the tank and a special service fire pump. That secondary supply for that low zone first 300’ ft. can be accommodated by a PRV. In addition to that after you pass that 500’ ft., basically the zone is limited to 300’ ft. and then as you pass 600’ ft. you add subsequent zones. Once you pass the 600’ ft. mark another big difference is the high pressure Siamese connections. The high pressure Siamese would be a separate distinct Siamese connection for anything above 600’ ft. You will notice that on all buildings 600’ ft. or taller that you will have multiple connections side-by-side located in a similar fashion as the old 1968 code. However, they cannot be side-by-side combination connections.

NYC chose to leave in the new code all three pump categories intact. Automatic Fire Pump, Standpipe/Sprinkler Booster Pump and the Special Service Fire Pump that would draw water from the roof tank. For an automatic fire pump or a special service fire pump you are required to have 65 psi at the top of the standpipe. It was always 65 psi for the automatic fire pump but it was harder to read because it was in the testing spec. But now you have to create enough pressure with a special service fire pump to create 65 psi at the roof manifold.

There are 3 categories of height of buildings. Those up to 300’ in height do not require a secondary water source for standpipe. They can be done 2 ways; 1) tank on roof with a special service pump because of the 65 psi at the top most outlets or you can do it from an automatic fire pump in the basement.

Once you go over 300’ ft. the requirements change. In a building up to 500’ ft. you have a pump in the basement. The first 300’ ft. is supplied by an automatic fire pump, getting suction from two city sources. If a building has two standpipes then the pump is sized at 750 GPM. In a building of 500’ ft. it can be zoned at 300’ ft. and 200’ ft. The only restriction is that a zone cannot exceed 300’ above grade. If you size a roof tank it has to be designed for 750 GPM at a 30 minute duration, with a capacity of 22,500 gallons for two risers. Then you will have a pump to boost the pressure from the roof tank that would supply the two risers. These risers would have to interconnect between the upper and lower zones to allow the Fire Department connections to supply the upper zone. The code also requires in buildings up to 500’ ft. to let there be a normally open connection between the upper and lower zones with a PRV to allow the tank and pump in the building to become the secondary water supply for the lower zone. The upper zone in the building up to 500’ ft. in height does not have a secondary water source. It does not have a secondary water source because it is not practical to do so.
Once a building goes over 500’ ft. in height the criteria changes. You still have a lower zone with a pump taking suction from two city mains, supplying two risers. You still have the cross connections. Once you go over 500’ ft. you have to have a primary and auxiliary water supply for each zone in the building. Once a building is over 600’ ft. the secondary water supply has to be by gravity. In essence the code requires:

- A primary and secondary water supply for every zone in the entire building.
- The secondary water supply for all the zones except for the roof be supplied by gravity only.
- Requires these zones other than the lower zone be no higher than 300’ ft.
- 350 psi maximum in a zone.

DOB will issue a bulletin to clarify how to apply the 2008 code to existing buildings. Any building constructed under the old code 1968 or 1938 code are allowed to continue in existence and any alterations to those buildings are allowed to use the code that was applicable at the time it was permitted, except there is a laundry list of items that in the new zone code that must be complied with. For example, the administrative portions, permits and penalties alike. This also includes the mechanical code, fuel gas code, plumbing code and fire protection portions Chapter 9 and Appendix Q of the Building Code. Any alteration not an existing building must comply with the 2008 code for fire protection. The Administrative Code Section is 28-101.4.3.

One provision in the fire code is that if your building faces onto a street with an unobstructed width of 38; or less, then the entire building has to be sprinklered.

Some additional questions from those in attendance:

Q. What is the maximum flow rate in NYC that DEP or DOB will allow for direct connections in street mains. At what flow rate should the fire pump be augmented by a suction tank? Who makes the determination? DOB or DEP?

A. DEP

Q. Are there any provisions in the code like as in the 1968 code for 20 minute versus 30 minute fire supply, for existing buildings?

A. No, but it may be in a bulletin.

Q. Please go over Local Law 26 regarding sprinkler pipe painting.

A. What the law specifically says regarding both sprinkler and standpipe: we have to paint the risers and the cross connects. Cross connects are defined in the code as the connection between risers and Siamese Fire Department connection. In addition, all control valve handles have to be color coded based on: yellow for combination; green for sprinkler; and red for standpipe. It does not require that feed mains, cross mains or branch lines be painted.

ASSE would like to thank Salvatore S. Rachiele, an ASPE member, for his cooperation with our Andy Cartoun in the joint ASSE/ASPE meetings and preparing and submitting these minutes of meeting.

Thank you Sal, it is much appreciated!

Meeting notes prepared and submitted by:
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New York, NY 10001
T: 646 674-6115
F: 212 563-7382
srachiele@loringengineers.com
MEMORY LANE

From left to right: Herb Panzer, Jim Church, Dick Toder, Rosemary Sherea, Joe Miele, Joe Petro, Vinnie Pantuso, Morti Hirsch, Geatano T, DiPietro and Patricia McGarvie.

Submit pictures you may have of ASSE events to be included here to Gdipietro@syska.com.
The History of the New York Chapter of the Society of Sanitary Engineering

Compiled and written by New York Chapter Historian Joseph S. Petro, CIPE, IPP, FASSE
Edited by Herbert Panzer, P.E., IPP, FASSE

Continued from the March bulletin...

Chapter 3 – The Sixties

1960
Officers: President Charles C. Snowden; Secretary James C. Church, P.E.; Treasurer John B. Lansing.

Tri-State Meeting was held with New Jersey and Pennsylvania Chapters. Lawrence Martin's efforts persuaded Governor Rockefeller to proclaim “Water Conservation Week” in New York State. James C. Church, P.E. was elected to National 2\textsuperscript{nd} Vice President.

1961
Officers: President Arthur M. Bayen; Secretary John B. Lansing; Treasurer James I. Kennedy.

New York Water Conservation Week was observed for the 3\textsuperscript{rd} year in a row. National Water Conservation Chairman, Tom McCarthy, received a reply from President Kennedy, James C. Church, P.E. was elected National 1\textsuperscript{st} Vice President.

1962
Officers: President Oscar C. Wahlstrom; Secretary James C. Church, P.E.; Treasurer John B. Lansing.

Jim Church was National 1\textsuperscript{st} Vice President for the second year. The New York Ladies Auxiliary was formed.

1963
Officers: President Irving L. Slater; Secretary James C. Church, P.E.; Treasurer John B. Lansing.

George R. Jerus, P.E. was selected to rewrite the NYC Plumbing and Fire Protection Code. James Church, P.E. was appointed a member of NYC Building Code Advisory and elected as National’s President.

1964
Officers: President Thaddeus R. Gillen; Secretary Charles C. Snowden; Treasurer John B. Lansing.

Jim Church was elected for a second term as National’s President. The chapter membership approved the incorporation of the chapter in New York State. The Josam Manufacturing Co. proposed a plumbing design education program under the supervision of New York Chapter members.

1965
Officers: President George R. Jerus, P.E.; Secretary Charles C. Snowden; Treasurer Arnold Schildknecht.
The chapter added a second meeting during the month, seminar style, dealing with plumbing design. “The Josam Plumbing Designers Training Program”, supervised by chapter members, was established. This was a two year program of 40 two hour sessions a year. The program was under the supervision of the Plumbing Designers Education Foundation and it eventually became part of the New York University of Continuing Education Program and was also adopted by the Pennsylvania Chapter for the education program.

Tom McCarthy was elected the Society’s 6th Vice President.

1966
Officers: President Benedict Goldreyer; Secretary Charles C. Snowden; Treasurer Arnold Schildknecht.

The second seminar meeting each month continued. The average meeting attendance was 75 or more. Tom McCarthy remained 6th National Vice President. New York added 4 members to the Quarter Century Club for a total of 6 New York members. New York was selected to hold the 1969 Annual Meeting.

Social events included the Annual Officers Cocktail Party and Dinner attended by 150, the Annual Dinner Dance attended by 300 and the start of the Annual Gold Outing attended by 84.

1967
Officers: President Victor Hruska; Secretary Jack Edwards; Treasurer Arnold Schildknecht.

In September, the enlarged Newsletter format was released with an initial mailing of 600. The February meeting on the new NYC Code attendance exceeded 100 people. Tom McCarthy was elected the Society’s 4th Vice President.

1968
Officers: President Eugene Collings; Secretary Edward Sacher, Treasurer Arnold Schildknecht.

Tom McCarthy was elected the Society’s 2nd Vice President. Mid-Atlantic States Meeting was held with New York, Pennsylvania and Delaware at the J.R. Smith factory in New Jersey. New NYC Code went into effect. An illustrated version of the Code was prepared by George Jerus and Vincent Pantuso and published in book form. The first Annual Chapter Fishing Trip was started by Bill Mueller and Frank Scalia. Frank later designed the plumbing systems for the World Trade Center.

1969
Officers: President Lawrence Eliseu; Secretary James C. Church, P.E.; Treasurer Arnold Schildknecht.

The Annual Meeting was held in New York at the Waldorf Astoria Hotel. Over 400 people attended including 144 from New York. Tom McCarthy was reelected 2nd Vice President. The program chairman was George Jerus and Tad Gillen. One of the meeting highlights was the Circle Line Boat Ride around Manhattan Island sponsored by the chapter.

Chapter 4 – The Seventies

1970
Officers: President Jospeh S. Petro; Secretary James C. Church, P.E.; Treasurer Arnold Schildknecht.

Tom McCarthy was elected the Society’s 1st Vice President and Charles C. Snowden was elected as a Director. The special events included a Turkey Shoot in December, a Fishing Trip in April, Mid-Atlantic States meeting in June, Gold Outing in August and a Dinner/Dance in November.
1971
Officers: President Donald T. Sweeney; Secretary James C. Church, P.E.; Treasurer Arnold Schildknecht.

A yearly $250.00 Education Awards Program was established for New York University and Mechanical Institute students to encourage plumbing design.

1972
Officers: President Vincent Pantuso; Secretary James C. Church, P.E.; Treasurer Arnold Schildknecht.

Monthly meeting programs were geared to plumbing design for various type buildings with papers on each topic distributed to attendees. Eight surviving New York charter members were added to the Quarter Century Club.

1973
Officers: President Leo A. Manka; Secretary James C. Church, P.E.; Treasurer Arnold Schildknecht.

Chapter membership increased to 290. The chapter continued the $250.00 awards to students in NYU and Mechanics Institute. Jim Church received the Society’s highest honor, the Henry B. Davis Award for his contributions to education, including after hours classes at his office, Society activities on the Seal Control Board and his outstanding contributions to the industry. Seven more chapter members who joined in the first years were added to the Quarter Century Club.

1974
Officers: President Herbert Panzer, P.E.; Secretary James C. Church, P.E.; Treasurer Arnold Schildknecht.

Field trips were made to the Victaulic Co. and Stevens Institute. Thomas F. McCarthy received the Henry B. Davis Award for his work on chapter development, chapter assistance, water conservation activities and service as a national officer. Joe Petro was appointed National Chairman of the Plumbing Specification Format Committee and attempted to persuade the Construction Specification Institute (C.S.I.) industry representatives in Texas, the proposal was rejected. However, in recent years there have been major revisions to the C.S.I. format and separate divisions are presently provided for plumbing and fire protection specifications.

1975
Officers: President Rosemary Sherer; Secretary James C. Church, P.E.; Treasurer Arnold Schildknecht.

Educational awards of $250.00 were again given to NYU and Mechanics Institute students. The first lady president of the New York chapter was well received at the Annual Meeting and was elected to the office of 9th Vice President. Herb Panzer and Morris Weinberg (PA), Co-Chairman of the By-Laws Committee, revised the Society structure from 9 Vice Presidents and 6 Directors to 3 Vice Presidents and 8 Regional Directors. This was originally suggested by the New York chapter in 1955.

1976
Officers: President Robert A. Rollmann; Secretary James C. Church, P.E.; Treasurer Arnold Schildknecht.

Rosemary Sherer was elected 2nd Vice President and Herb Panzer was elected as a Regional Director. At the Annual Meeting, Rosemary Sherer presented a paper on “Investigating the Role of the Plumbing Designer in ASSE” and recommended that the Society establish a subcommittee to assist chapters in developing a Plumbing Design Course.
1977
Officers: President Albert P. Mosticchio; Secretary James C. Church, P.E.; Treasurer Arnold Schildknecht.

The chapter continued its policy of education awards to encourage plumbing design. Rosemary Sherer was elected as 1st Vice President of the Society. A pre-meeting social policy was initiated by President Mosticchio.

1978
Officers: President Richard H. Toder, P.E.; Secretary James C. Church, P.E.; Treasurer Elizabeth B. Regan.

Incentive programs were developed to increase membership and chapter meeting attendance. President Toder was instrumental in bringing in 105 new chapter members. Morti Hirsch and Tony Florez, chapter members, were instrumental for the legality of requiring sprinkler protection for high rise office buildings. Rosemary Sherer was the first lady elected President of the Society. Rosemary and chapter officers met with New York Governor Carey and received a proclamation designating a week in March as “Sanitary Engineering Week”. The Fellow Award, a prestigious award to recognize and encourage chapter and national activity was proposed by Joe Petro and presented to the Board. The award was approved in 1980 and is presented each year to the Society President and worthy members.

1979
Officers: President Morti Hirsch, P.E.; Secretary James C. Church, P.E.; Treasurer Elizabeth B. Regan. This was a busy year with chapter and Society activities. Arthur M. Bayen received the Henry B. Davis award for his national and local activities with ASSE. The chapter requested a grant from Governor Carey for metering and monitoring water supplies for buildings since many buildings are unmetered and pay water usage based upon building frontage. The chapter sent President Carter suggestions for postage stamps on water conservation. ASSE International President Rosemary Sherer appointed a committee to develop a Plumbing Design Correspondence Course. For many years, Society members worked with Stevens Institute in New Jersey to develop this course. The task became monumental and eventually was put aside due to lack of funds. Jim Church was Director of the Standards Committee. Herb Panzer was appointed Director of the Refresher Course (Seminar) and presented an outstanding program on “New Products and Innovations in Plumbing Engineering”. Joe Petro was appointed chairman of the “Energy and Water Conservation Committee” and was requested to prepare a booklet which was eventually published as a book.

Richard Toder was appointed chairman of the “Legionnaires Disease Task Force”. Richard Toder contacted Dr. Norman Runsdorf who had a theory on the disease. Dr. Rursdorf made a presentation at the 1979 Annual Meeting and received the Henry B. Davis nonmember award in 1980. Dr. Rursdorf has since passed away, but, to this day, Richard Toder has remained involved with Legionnaires Disease, traveling throughout the United States, England and other parts of the world.

To be continued...
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**NY ASSE – 2010**

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<th>Pledge</th>
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</tr>
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<td>$450</td>
</tr>
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<td>$500</td>
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<td>$2000</td>
</tr>
<tr>
<td>One time Single 8 1/2” x 11” insert flyer</td>
<td>$250</td>
</tr>
</tbody>
</table>

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**Address:** 1515 Broadway, 14th Floor New York, NY 10036  
**Phone:** (212) 556-3426  
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**E-mail:** gdipietro@syska.com
NEMA Motor Ratings & Control Panel Enclosures

When specifying electric motors, it should be noted that the NEMA Standard Voltage Ratings should be used and not the system voltage.

<table>
<thead>
<tr>
<th>NEMA Motor Voltage Rating</th>
<th>System Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>115 Volts</td>
<td>110 – 120 Volts</td>
</tr>
<tr>
<td>200 Volts</td>
<td>209 – 220 Volts</td>
</tr>
<tr>
<td>230 Volts</td>
<td>240 Volts</td>
</tr>
<tr>
<td>460 Volts</td>
<td>480 Volts</td>
</tr>
<tr>
<td>575 Volts</td>
<td>600 Volts</td>
</tr>
</tbody>
</table>

For all other electrical equipment System Voltage should be specified.

* * *

Control Panel Enclosure Ratings

The rating of enclosures is intended to provide information to help you make appropriate enclosure selections based on various environments.

- **NEMA 1**: Enclosures are designed to prevent accidental contact with enclosed hazardous parts, and are suitable for indoor applications only.
- **NEMA 2**: Same as NEMA 1, but also includes protection against dripping and splashing of liquids.
- **NEMA 3**: Is for indoor or outdoor use. Designed to prevent accidental contact with enclosed parts and to protect windblown dust and inclement weather.
- **NEMA 3R**: Same as NEMA 3, but excludes protection against windblown dust.
- **NEMA 3S**: Is for indoor or outdoor use. Designed to prevent accidental contact with enclosed parts; to protect from dirt, windblown dust, inclement weather and to allow external mechanisms to remain operable if there is a formation of ice on the enclosure.
- **NEMA 3X**: Same as NEMA 3S, but includes protection against corrosion.
- **NEMA 3RX**: Same as NEMA 3X, but excludes protection against windblown dust.
- **NEMA 3SX**: Is for indoor or outdoor use. Designed to protect against dirt, windblown dust and inclement weather. It will provide an additional level of protection against corrosion and also allow external mechanisms to remain operable with the formation of ice on the enclosure.
- **NEMA 4X**: Same as NEMA 4, but includes protection against corrosion.
- **NEMA 5**: Is for indoor use only. Designed to protect against dirt, dust, lint, fibers, and dripping.
- **NEMA 6**: Is for indoor or outdoor use. Designed to protect against dirt, dust, lint, fibers and dripping.
- **NEMA 6P**: Same as NEMA 6, but includes protection against corrosion and the entry of water due to prolonged submersion to a limited depth.
- **NEMA 7**: Is for indoor use in Class I, Division I, Groups A, B, C, and D locations as defined in NFPA 70: National Electrical Code. Designed to meet National Electrical Code Class I. The circuit interruption occurs in air.
- **NEMA 8**: Is for either indoor or outdoor use. Similar to NEMA 7, except the circuit interruption occurs in oil.
- **NEMA 9**: These enclosures are constructed for indoor use in Class I, Division II, Groups E, F, and G locations.
- **NEMA 10**: These enclosures are permissible by the Mine Safety and Health Administration. Suitable for use in coal mines.
- **NEMA 12**: Is for indoor use without knockouts. Designed to prevent accidental contact with enclosed parts and to protect against dirt, dust, lint, fiber and water splashing or dripping.
- **NEMA 12K**: Same as NEMA 12, but includes enclosures constructed with knockouts.
- **NEMA 13**: Is for indoor use with knockouts. Designed to prevent accidental contact with enclosed parts and to protect against dirt, dust, lint fibers and water dripping or splashing on the enclosure.

-To Be Continued-
-SINCE 1930-
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TEMPERING VALVE
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STANDARD No. 1017

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Copper tube, like all piping materials, expands and contracts with temperature change. Therefore, in a copper piping system subjected to excessive temperature changes, the copper piping tends to bend when it expands unless form of compensation is built into the system. Stress on the joints can also occur. Such stresses, buckles, or bends are prevented by the use of expansion joints or by installing offsets, “U” bends or similar arrangements in the piping. These specially shaped tube sections take up expansion and contraction alleviating stress. The expansion of a length of copper tube may be calculated from the following:

\[
\text{Temperature Rise (F) } \times \text{Length (feet) } \times 12 \text{ (inches per foot) } \times \text{Expansion Coefficient (in. per in. per F)} = \text{Expansion (inches)}.\]

Calculations for expansion and contraction should be based on the average coefficient of expansion of copper which is 0.0000094 per degree F, between 40°F and 212°F. For example, the expansion of each 100 feet of length of any size copper piping heated from room temperature (40°F) to 140°F (a 100°F rise) is 1.128 inches. (See Table 1 for quick chart).

\[
100°F \times 100 \text{ ft} \times 12 \text{ in./ft} \times 0.0000094 \text{ in./in./F} = 1.128 \text{ in.}\]

Table 1 Expansion Copper

<table>
<thead>
<tr>
<th>Temperature (°F)</th>
<th>Linear Temperature Expansion (inches/100 feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>0.1</td>
</tr>
<tr>
<td>20</td>
<td>0.2</td>
</tr>
<tr>
<td>32</td>
<td>0.4</td>
</tr>
<tr>
<td>40</td>
<td>0.4</td>
</tr>
<tr>
<td>50</td>
<td>0.6</td>
</tr>
<tr>
<td>60</td>
<td>0.7</td>
</tr>
<tr>
<td>70</td>
<td>0.8</td>
</tr>
<tr>
<td>80</td>
<td>0.9</td>
</tr>
<tr>
<td>90</td>
<td>1.0</td>
</tr>
<tr>
<td>100</td>
<td>1.1</td>
</tr>
<tr>
<td>120</td>
<td>1.4</td>
</tr>
<tr>
<td>140</td>
<td>1.6</td>
</tr>
<tr>
<td>160</td>
<td>1.8</td>
</tr>
<tr>
<td>180</td>
<td>2.1</td>
</tr>
<tr>
<td>200</td>
<td>2.3</td>
</tr>
<tr>
<td>212</td>
<td>2.4</td>
</tr>
</tbody>
</table>

From figure B (below), the change in length, per 100 feet of copper with temperature change can be determined. The expansion calculated above can also be determined by entering Figure B at 100°F, moving up to the line, and reading across to 1.1285 inches.

Table 2 Developed Length of Expansion Offsets

<table>
<thead>
<tr>
<th>Expected Expansion Inches</th>
<th>Length “L” for Tube Sizes Shown in inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>50 59 67 74 80 91 102 111 120 128 142</td>
</tr>
<tr>
<td>1/4</td>
<td>68 81 94 104 113 129 144 157 169 180 201</td>
</tr>
<tr>
<td>1/2</td>
<td>86 101 115 127 138 158 176 191 206 220 245</td>
</tr>
<tr>
<td>2/8</td>
<td>202 222 239 255 284</td>
</tr>
<tr>
<td>3/8</td>
<td>273 308 341</td>
</tr>
<tr>
<td>4/8</td>
<td>349 394 440</td>
</tr>
<tr>
<td>5/8</td>
<td>426 481 536</td>
</tr>
</tbody>
</table>

Table 3 (below) gives the radius necessary for coiled expansion loops, described in Figure C (below); expansion offset lengths may be estimated from Table 2 (above).
### Table 3  Radii of Coiled Expansion Loops
For Configurations Shown as Figures A & B

<table>
<thead>
<tr>
<th>Expected Expansion Inches</th>
<th>½</th>
<th>¾</th>
<th>1</th>
<th>1 ½</th>
<th>2</th>
<th>2 ½</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>½</td>
<td>8</td>
<td>9</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>15</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>1</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>17</td>
<td>18</td>
<td>21</td>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td>1 ½</td>
<td>14</td>
<td>16</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>25</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>19</td>
<td>21</td>
<td>23</td>
<td>25</td>
<td>29</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>2 ½</td>
<td>18</td>
<td>21</td>
<td>24</td>
<td>26</td>
<td>29</td>
<td>33</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
<td>23</td>
<td>26</td>
<td>29</td>
<td>31</td>
<td>36</td>
<td>40</td>
<td>43</td>
</tr>
<tr>
<td>3 ½</td>
<td>21</td>
<td>25</td>
<td>28</td>
<td>31</td>
<td>34</td>
<td>39</td>
<td>43</td>
<td>47</td>
</tr>
<tr>
<td>4</td>
<td>22</td>
<td>26</td>
<td>30</td>
<td>33</td>
<td>36</td>
<td>41</td>
<td>46</td>
<td>50</td>
</tr>
</tbody>
</table>

**Figure C**

*Soft – Annealed temper copper piping can withstand the expansion of freezing water several times before bursting. This is a vital safety factor favoring soft piping for underground water services. The required length of CU tubing in an expansion loop or offset in underground soft annealed temper CU piping can be also calculated utilizing the following:*

\[
L = \frac{1}{2} \left( \frac{3E}{P} \right)^{1/2} \left( d_o e \right)^{1/2}
\]

*Where \( L \) = length, in feet, in an expansion loop or offset as shown as in Figure A, B & C (above).\*

\( E \) = modulus of elasticity of copper, in psi.

\( P \) = design of allowable stress of material in flexure, in psi.

\( d_o \) = outside diameter of pipe, in inches.

\( e \) = amount of expansion to be absorbed, in inches.

For (soft) annealed temper CU piping:

\( E = 15,600,000 \text{ psi} \)

\( P = 6,000 \text{ psi}, \) thus

The developed length \( L \) is:

\[
L = 7.4 \left( d_o e \right)^{1/2}
\]

**Pipe Supports** – Drawn piping, because of its rigidity, is preferred for exposed piping situations. Where not otherwise stated in plumbing codes, drawn temper tube requires support for horizontal lines at 8-foot intervals for sizes of 1-inch and smaller, and at 10-foot intervals for larger sizes. Vertical lines are usually supported at every story or at maximum of 12-foot intervals, but for long lines of expansion and contraction, anchors may be several stories apart provided there are tightly packed sleeves at all floors to restrain lateral movement.

**Tub Supports** – Soft annealed temper tube in coils permits long runs minimizing joints. Vertical lines of (soft) annealed temper CU tube where required should be supported at intervals of every 10 feet. Horizontal lines should be supported at least every 8 feet.

**Hard Drawn Copper Piping:**

Use the following to determine the length of expansion of copper in feet:

*Formula:*

\[
L = 6.16 \sqrt{DoI}
\]

\( L \) = Length of expansion loop, or offset in feet (FT) (as shown in figure A)

\( Do \) = Outside diameter of pipe, in inches (IN)

\( I \) = Expansion of pipe, in inches (IN)

*Example:*

Find the length of an expansion loop (\( L \)) required for a one hundred (100) foot length of four (4) inch copper pipe type “L”.

Prior to solving the formula, determine the following:

1. Outside diameter of a 4 inch copper (CU) pipe from figure “D” (below).
2. The outside diameter for four (4) inch copper pipe is 3.905 inches. Expansion of CU at 100°F rise from figure B is one inch.

Substitute the information into the formula:

1. \( L = 6.16 \sqrt{DoI} \)
2. \( L = 6.16 \sqrt{3.905 \cdot 1.28} \)
3. \( L = 6.16 \sqrt{4.50} \)
4. \( L = 6.16 \sqrt{2.24} \)
5. \( L = 13.77 \text{ FT} \)
### Figure D  Physical Characteristics of Copper Tube
Types K, L, M and DWV

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Type K</th>
<th>Type L</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nominal Dimensions, inches</td>
<td>Calculated Values, Based on Nominal Dimensions</td>
</tr>
<tr>
<td></td>
<td>Outside Diameter</td>
<td>Inside Diameter</td>
</tr>
<tr>
<td>¼</td>
<td>.375</td>
<td>.305</td>
</tr>
<tr>
<td>⅜</td>
<td>.500</td>
<td>.402</td>
</tr>
<tr>
<td>½</td>
<td>.625</td>
<td>.527</td>
</tr>
<tr>
<td>¾</td>
<td>.750</td>
<td>.652</td>
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<td>.875</td>
<td>.745</td>
</tr>
<tr>
<td>1</td>
<td>1.125</td>
<td>.995</td>
</tr>
<tr>
<td>1 ¼</td>
<td>1.375</td>
<td>1.245</td>
</tr>
<tr>
<td>1 ½</td>
<td>1.625</td>
<td>1.481</td>
</tr>
<tr>
<td>2</td>
<td>2.125</td>
<td>1.959</td>
</tr>
<tr>
<td>2 ¼</td>
<td>2.625</td>
<td>2.435</td>
</tr>
<tr>
<td>3</td>
<td>3.125</td>
<td>2.907</td>
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<td>3 ½</td>
<td>3.625</td>
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<td>9.449</td>
</tr>
<tr>
<td>12</td>
<td>12.125</td>
<td>11.315</td>
</tr>
</tbody>
</table>

-TO BE CONTINUED-
Low Flow Shower Heads Cause an Increase in Scalding Incidents.

By: Ron George, CIPE, CPD, President,
Ron George Design and Consulting Services
www.rongeorgedesign.com

Low flow fixture mandates by government and industry associations have unknowingly created a serious hazard in older homes without even realizing what they have done. They have recently been mandating low flow shower heads which create a condition where incidents of scalding and thermal shock are on the rise in installations where there is no pressure or temperature compensating type shower valve installed in a plumbing installation. Low flow shower heads have already contributed to a significant increase in scalding incidents in installations where non-compensating type shower valves are installed. (non-compensating shower valves are two handled shower valves or single handle valves without temperature or pressure compensating components)

The installation of a low flow shower heads with flows that are below the flow rate of adjacent fixtures creates a condition where the shower head is no longer the point of pressure relief or the largest demand in the system. This creates a condition where hot water flows toward the other fixtures in an older piping system when there are pressure drops from cold water usage elsewhere in the piping system.

Most homes built before the 1970s to 1980s were built without compensating type shower valves because they were not required by the codes. (Pressure balancing or temperature compensating shower valves with maximum temperature limit stops and check stops to prevent crossover flow) Based on the age of the housing stock in the United States, it is estimated that more than half of all homes with showers and bathtubs still do not have compensating type shower control valves. Compensating type control valves were not mandated in the plumbing codes until the last couple of decades. Just about every home built in the United States from the time of our founding fathers up until the late 80s was built without compensating type shower or bathtub controls. When a shower head is flowing without a pressure or temperature compensating control valve and check valves and there is a nearby fixture on the cold water (CW) system that turns on, the hot water will flow through the mixing valve to the cold water piping system which is the path of least resistance. When an old two-handle or non-compensating type single handle faucet is flowing hot and cold water into the same mixing chamber or pipe between the two valves and a nearby cold water fixture is turned on, the cold water pressure will drop and then the hot water pressure will be higher than the cold water pressure. This condition causes hot water to temporarily cross over in the mixing faucet when there is a low-flow shower head installed. It allows hot water to flow toward the open cold water fixture. When the hot water crosses over in the mixing valve only hot water will flow up the shower head arm to the shower. The bather will experience a sudden burst of hot water when another cold water fixture is used. Many people have been experiencing this phenomenon which is commonly referred to as thermal shock or scalding for years, except the number and severity of occurrences will increase exponentially with low-flow shower heads installed on older non-compensating type shower valves. The result will be many more incidents of thermal shock which can lead to a slip and fall injury or if the hot water temperature is high enough, it can lead to a scalding incident. This is why I recommend storing hot water at 140 degrees F to minimize Legionellae bacteria growth in the water heater tank and I recommend delivering hot water to the hot water piping system at a maximum of 120 to 125 degrees Fahrenheit through an ASSE 1017 or CSA B-125.3 temperature actuated mixing valve at the water heater. The model plumbing codes require a new shower valve to be an ASSE 1016 or CSA B-125.1 shower control valve which have pressure compensating or temperature compensating components and check valves in the shower valve to address pressure imbalances in the system which lead to temperature fluctuations in the shower.

To eliminate thermal shock the in the older style non-compensating shower valves they must be replaced with mixing valves that meet the requirements of the code. They must be Pressure Balancing,
Thermostatic or Combination Pressure Balancing/Thermostatic shower valves designed for individual showers and the shower valve flow rate should be matched to the flow rate of the shower head.

**Warning Labels**
At the very least, any water utility or water conservation organization promoting or handing out free or discounted low-flow shower heads should also mandate replacement of older style shower valves or offer to replace the older style shower valves with code compliant compensating type shower valves that are matched to the flow rate of the new low-flow shower heads. These organizations should also hand out warning literature of the dangers of low flow shower heads when used with non-compensating type shower valves.

In older areas with non-compensating type shower valves, serious consideration should be given to mandating temperature actuated flow reduction valves that conform to ASSE 1062 for any existing two-handle shower valve or single handle non-compensating type shower valve. The ASSE 1062 devices shut down the flow of water to a trickle when the temperature exceeds about 115 to 117 degrees Fahrenheit. It should be noted that the ASSE 1062 device minimizes the risk of scalding with non-compensating type valves but it will not prevent thermal shock and slip and fall accidents that are caused by pressure disturbances.

I should also note there has been data from flow test studies conducted by a major plumbing manufacturers associations that shows some models of ASSE 1016 certified code compliant shower valves will not control the water temperatures within the limits required in the ASSE 1016 standard titled: Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations when they are coupled with low flow shower heads. The ASSE 1016 shower valve flow test is based on a flow rate of 2.5 gallons per minute. When the flow rate was reduced to 1 gallons per minute in the tests, a majority of the manufacturers shower valves did not control the temperatures within the limits in the standard.

Who is liable when someone is injured because of this program to mandate low flow shower heads without verifying the piping system is designed with the proper type of shower control valve for the very low flows?
Plumbing Standards Update
By: Ron George, CIPE, CPD, President,
Ron George Design and Consulting Services
www.rongeorgedesign.com

The model code organizations have been busy preparing the 2009 editions of the plumbing codes and the plumbing standards writing organizations have been busy developing the new standards and updating existing standards. The following is a summary of the activities of a few of the plumbing standard writing organizations.

American Society of Mechanical Engineers (ASME) Update
The ASME A112 Plumbing Materials and Equipment Committee meeting was held in July in Cincinnati, Ohio. The committee met to revise standards and report on the progress of the various standards undergoing revisions.

Patrick J. Higgins Award
One the items on the agenda for the ASME A112 Committee was giving a new award which was developed over the last couple of years to honor the memory of Patrick J. Higgins. Pat was very involved in plumbing code and standard development and he was always in attendance at code and standard meetings with a smile and some occasional Irish humor to lighten things up. The Patrick Higgins Medal was named in his honor. Mr Higgins was the chairman of the ASME A112 Plumbing Materials and Equipment committee when he died and he was also the author of this “Code Update” column in Plumbing Engineer Magazine. He has influenced and touched many people in the industry and he is the one who persuaded me to get involved with the ASME Standards committees. Pat was well respected in the industry and he died suddenly several years ago.

The first ever Patrick J. Higgins medal was awarded to Morris Klimboff who was a longstanding member of the ASME A112 Plumbing Materials and Equipment Committee. Mr. Klimboff was selected as the first recipient for the Patrick J. Higgins award by the award committee and unfortunately he passed away before he could receive his medal. Mr. Klimboff was involved in many Plumbing industry organizations and he was a member of several ASME standards task groups. Mrs. Klimboff accepted the award on behalf of her husband, Morris Klimboff. The presentation was made at a luncheon which was attended by Mrs. Klimboff, her daughter, members of the ASME A112 Plumbing Materials and Equipment Committee and guests. The Medal was awarded to Mr. Klimboff by the ASME Board on Standardization and Testing to honor his dedicated service to the A112 Standards Committee and several ASME members spoke of their many fond memories of Mr, Klimboff.

ASME/CSA Joint Harmonization Task Force on water Efficient Shower Heads
The ASME Joint Harmonization Task Force (JHTF) on water efficient shower heads met during the ASSE Conference in Orlando, Florida. The committee is in the process of evaluating different types of water efficient shower heads for water savings, user satisfaction wetting abilities and spray force. During a lunch break, the committee was able to view some of the proposed test rigs which will be used to evaluate the various shower heads. The idea is to establish minimum criteria for evaluating various shower heads. The shower heads will not be identified by name outside of the committee, but the better performing shower valves will receive the an identifying mark as a water saving shower head.

The JHTF on Water Efficient Shower Heads is a sub-set of the JHTG on Plumbing Supply Fittings under the direction of the ASME A112 Main Committee and the CSA B125 Technical Committee.
During lunch a consultant who is conducting a similar and somewhat parallel research project for the California Energy Commission's Public Interest Energy Research (PIER) program gave a presentation that showed how his group is looking at the development of new testing protocols for measuring the performance of showerheads. He invited members of the JHTG to participate in the Project Advisory Committee (PAC) for his California project. The California project will focus on the development of new testing protocols for measuring the performance of showerheads. The role of the PAC is as follows.

- Provide guidance on scope of research; research methodologies; timing; coordination with other research.
- Review deliverables.
- Provide recommendations, as needed, to enhance tangible benefits to the state of California and other entities.
- Provide recommendations regarding information dissemination, market pathways or commercialization strategies relevant to the research products.

The performance advisory group was reported to be a diverse group of researchers, consultants, product manufacturers, water utility representatives, and others with a particular interest in low flow showerhead performance.

The PIER activity is separate from the work of the ASME/CSA Joint Harmonization Task Force but the two organizations generally agreed that each group would benefit from the work of the other and cooperation from members was sought.

At the ASME/CSA JHTG meeting in Orlando the consultant from California requested time to present an update on the survey being carried out under the PIER program in California and also a consumer study.

Following his presentation, many JHTF members pointed out some of the deficiencies in the testing in that they were asking if any of the bathers experienced thermal shock. I asked who they were conducting the testing with and what kind of buildings and faucets and piping was being used. He said they were using a block of hotel rooms and paying people to take showers. I pointed out that thermal shock will not occur in the hotel building that they were using in their testing if it has a properly design plumbing system behind the wall and if it is installed in accordance with the code. There needs to be some testing with the low flow shower heads in showers with older two-handled shower valves and non-compensating shower valves that were installed prior to code requirements in the late seventies and early eighties. These older systems are grandfathered-in probably close to half of all existing homes and buildings. Testing in these older types of facilities with pressure disturbances will produce thermal shock. It is also important to record what kind of shower valve and what kind of plumbing system the shower head is installed in. The results of proper testing will point out the need for “warning labels” on low flow or “water efficient” shower heads when they used in systems with two handled shower valves or systems with non-compensating shower valves. There were a couple of shower head manufacturers and the Consultant from California that claimed the low flow shower heads that they have tested will not cause thermal shock or scalding. One manufacturer claimed he has sold over 30,000 low flow shower heads and not had one complaint. He said his shower head has a special pressure compensator that compensates for flow and pressure. He could not have been more misdirected. The thermal shock and scalding is a matter of basic physics. If you restrict the flow at a shower head and you have a pressure drop in the cold water system from a nearby fixture flowing like a washing machine fill or a water closet flushing, the temperature will change at the shower head if it is served by a two handle shower control valve or a non-compensating shower valve. The special pressure compensator he spoke of is common in all pressure compensating shower valves it is a rubber orifice that get smaller as the system pressure gets higher to maintain a relatively constant flow rate over a wide range of delivery pressures. A pressure compensating shower head will not balance pressures within the plumbing system it will only regulate the flow of water out of the shower head. The only way to deal with fluctuating pressures and temperatures is by using an ASSE
1016 type shower valve or other approved device. If the PIER survey is asking everyone if they experience thermal shock in their shower and the shower is supplied with a pressure balancing shower valve then of course the results of the survey will be skewed and that is why the low flow shower head manufacturer’s and the consultant claim there are no problems. When the California consultant and a couple of low flow shower head manufacturer’s claimed thermal shock is not an issue. I couldn’t believe my ears. Several people on the JHTF committee spoke up and confirmed thermal shock could be an issue with non-compensating valves and low flow shower heads. This brings me to another thing I heard recently. Apparently there are some manufacturers of low flow shower heads that have gone to cities like Miami-Dade County and convinced them to mandate low-flow shower heads for all showers in their jurisdiction. This seems like a lousy way to save a few gallons of water if you end up scalding a lot of people and causing an increase in thermal shock/slip and fall incidents in the process.

I should also note there has been data from flow studies conducted by a major manufacturer that shows some types of ASSE 1016 shower valves will not control the water temperatures within the limits required in the ASSE 1016 standard titled: Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations when they are coupled with low flow shower heads. The ASSE 1016 shower valve flow test is based on 2.5 gallons per minute. When the flow rate was reduced to 1 gpm a significant percentage of the manufacturers shower valves did not control the temperatures within the limits in the standard.

Who is liable when someone is injured because of this program to mandate low flow shower heads without verifying the piping system is designed with pressure compensating shower valves with check valves on each supply to the faucet and a valve that has been tested to control within the temperature ranges in the ASSE Standard at the reduced flow rates.

I applaud the efforts of the ASME/CSA Joint Harmonization Task Group on Low Flow Showers for approaching this issue with an eye toward testing to see how effective these shower valves will be. Most of the task group members seem to be aware of the safety issues and I only hope that some of the studies for shower head efficiency include some of these very low flow shower heads in systems with two handled shower valves and non-compensating shower valves. I suggest if the testing of two handled shower valves or non-compensating shower valves they should use an ASSE 1062 temperature actuated flow reduction device to prevent seriously scalding any of the test participants. I’m sure if the testing is done with non-compensating shower controls it will result in warnings about not using low flow shower heads in systems with two handle shower valve or non-compensating shower valves. The compensating type shower valves should also include check valves on the inlet to the valve to prevent cross flow.

New ASME Plumbing Product Standards being Developed
ASME is in the process of developing a couple of new standards. One is a standard ASME A112.18.8: Sanitary Waste Valves for use in lieu of tubular P-traps. This standard is nearing completion and is currently being balloted to the project team at the time of this writing. The standard is for elastomeric waste valves that are installed in tubular drain in lieu of p-traps.

The other new standard being developed is for fixture trap and supply covers. The Standard will be known as ASME A112.18.9: Barrier Free Protection for Traps and Supplies. A first meeting of this committee is planned Monday January 12, 2009 1pm to 5pm at the Doubletree Hotel, San Diego, Downtown, 1646 Front Street, San Diego, California.

Existing ASME Plumbing Product and Equipment Standards Being Revised
ASME A112.6.1 Supports for Off-the-Floor Plumbing Fixtures. Reaffirmed on February 28, 2008.
ASME A112.6.2 Wall Affixed Support. The standard was reaffirmed on October 5, 2004.
ASME A112.6.3 Floor Drains. The standard was reaffirmed on April 11, 2007.
ASME A112.6.4 Roof Drains. The current standard is under review.
ASME A112.6.5 Hydrants. Mr. Smith reported. The current standard is under review.
ASME A112.14.3 Grease Interceptors. The current standard is under revision.
ASME A112.18.1 Plumbing Fixture Fittings. CSA Harmonization efforts are ongoing.
ASME A112.18.2 Fixture Waste Fittings. The standard is waiting ANSI approval.
ASME A112.18.6 Flexible Water Connectors. CSA harmonization efforts are ongoing.
ASME A112.18.8 Sanitary Waste Valve for use in Lieu of P-Traps. Chairman is working to resolve negative ballot comments of both the main committee members and project team members.
ASME A112.19.1 Enameled Iron Plumbing Fixtures. The standard is waiting ANSI approval.
ASME A112.19.2 Vitreous China Plumbing Fixtures. The standard is waiting ANSI approval.
ASME A112.19.3 Stainless Steel Plumbing Fixtures. The standard is waiting ANSI approval.
ASME A112.19.4 Porcelain Enameled Steel Plumbing Fixtures. The Project team chairman, Mr. Pete DeMarco reported the revision of the current standard has been incorporated into the revision of ASME A112.19.1 Enameled Iron Plumbing Fixtures ASME staff suggested that PT-North American Harmonization Group prepare a plan to reorganize the Project Teams to reflect these recent consolidations.
ASME A112.19.5 Trim for Water Closet Bowls and Tanks. CSA harmonization efforts are ongoing.
ASME A112.19.7 Whirlpool Bathtub Appliances. Work is ongoing toward a revision of the current standard.
ASME A112.19.8 Suction Fittings for Whirlpools, Spas & Hot Tubs. The Project Team was working on Addenda “B” to the standard and is being balloted by the Board.
A committee member noted there had been a recent death due to the failure of a cover and the death has drawn attention to the need for thread torque requirements so the covers do not come off easily.
ASME A112.19.9 Non-Vitreous Ceramic Plumbing Fixtures. CSA harmonization efforts ongoing.
ASME A112.19.13 Electro-Hydraulic Water Closets. CSA harmonization efforts are ongoing.
ASME A112.19.14 Dual Flush for 6L Water Closets. This standard is not being harmonized. References to this standard will be included in the other harmonized standards.
ASME A112.19.17 Safety Vacuum Release System (SVRS). The Project Team leader will prepare a resolution report with regard to the negative comments received on the latest ballot and submit the completed resolution report to the Secretary of the Main Committee for distribution to those who had comments on the latest ballot.
The Secretary of the Main Committee is preparing a complete report of the latest Project Team voting tally including all unresolved negative votes and associated comments for inclusion with a ballot sent concurrently to the Main Committee and Project Team.
ASME A112.19.19 Waterless Urinals. CSA Harmonization of this standard is ongoing.
ASME A112.20.1 Qualification of Installers of High Purity Piping Systems. The current standard is under review.
ASME A112.20.2 Qualification of Installers of Firestop Systems and Devices for Piping Systems. The current standard is under review.

American Society of Sanitary Engineering (ASSE) Update
The American Society of Sanitary Engineering recently held their annual meeting in Orlando Florida. The following is a brief summary of what was reported at the meeting.

The ASSE Standards Program
The Product Standards Committee and the various working groups have been busy reviewing and revising the following ASSE Standards:

ASSE 1003 - Performance Requirements for Water Pressure Reducing Valves,
ASSE 1012 - Performance Requirements for Backflow Preventers with Intermediate Atmospheric Vent
ASSE 1013 - Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers
ASSE 1015 - Performance Requirements for Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies
ASSE 1016 - Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations
ASSE 1018 - Performance Requirements for Trap Seal Primer Valves - Potable Water Supplied
ASSE 1019 - Performance Requirements for Vacuum Breaker Wall Hydrants, Freeze Resistant, Automatic Draining Type
ASSE 1021 - Performance Requirements for Drain Air Gaps for Domestic Dishwasher Applications
ASSE 1027 - Performance Requirements for Fill Tank Backflow Protection Systems for Gravity Water Closet Flush Tanks
ASSE 1030 - Performance Requirements for Positive Air Pressure Attenuators for Sanitary Drainage Systems
ASSE 1037 - Performance Requirements for Pressurized Flushing Devices (Flushometers) for Plumbing Fixtures
ASSE 1044 - Performance Requirements for Trap Seal Primer Devices - Drainage Types and Electronic Design Types
ASSE 1047 - Performance Requirements for Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies
ASSE 1048 - Performance Requirements for Double Check Detector Fire Protection Backflow Prevention Assemblies
ASSE 1050 - Performance Requirements for Stack Air Admittance Valves for Sanitary Drainage Systems
ASSE 1051 - Performance Requirements for Individual and Branch Type Air Admittance Valves for Sanitary Drainage Systems
ASSE 1055 - Performance Requirements for Chemical Dispensing Systems
ASSE 1056 - Performance Requirements for Spill Resistant Vacuum Breaker
ASSE 1066 - Performance Requirements for Individual Pressure Balancing In-Line Valves for Individual Fixture Fittings

Two new ASSE product standards are in the development stages –
ASSE Draft 1026 - Performance Requirements for Dual Check Backflow Preventer Components Installed in Medical / Dental Water Treatment Systems and
ASSE Draft 1049 - Performance Requirements for Individual and Branch Type Air Admittance Valves for Chemical Waste Systems.

Four ASSE product standards were revised and re-issued this year. They were:  
ASSE 1001, ASSE 1002, and ASSE 1055, and one new standard, ASSE 1071.

Last year, five ASSE standards started the revision process outside of the normal 5-year cycle. They were:  
ASSE 1013, ASSE 1015, ASSE 1016, ASSE 1047 and ASSE 1048.

The request to revise these standards came from the industry for the purpose of harmonizing technical requirements with the Canadian Standards Association (CSA) standards and the American Society of Mechanical Engineers (ASME) standards. All five of the ASSE draft standards are nearing the end of the revision process and should be issued in the first half of 2009.

The reduced pressure/dual check group of standards include the following standards: (ASSE 1013, ASSE 1015, ASSE 1047 and ASSE 1048)
These standards have been revised to include all performance tests and criteria from across North America in one set of standards. In addition, when the various performance tests were reviewed, the most stringent pass/fail requirements were included in the standards. The fifth standard in revision outside of its normal cycle is ASSE 1016. In October of 2008 the ASSE 1016 working group & ASME/CSA Task Group meeting was held in as ASSE offices and a draft was finalized for the purpose of letter ballots went out to the working group and also to present to the ASME/CSA Joint Harmonized Committee for their review and consideration for adoption into the ASME A112.18.1/CSA B125.1. ASSE 1016 will be the first truly harmonized standard between ASSE and CSA. It will be a milestone accomplishment for both organizations.

The ASSE Series 7000, Professional Qualifications Standards for Plumbing-Based Fire Protection Systems Installers and Inspectors, has been approved by the ASSE Board of Directors, and has been submitted to the American National Standards Institute (ANSI) to receive the designation as an American National Standard. During the Final Action hearings in Minneapolis, MN this fall, the IRC adopted mandatory plumbing-based residential fire suppression systems for all new homes using the 2009 edition of the IRC. ASSE should be ready to release their certification program to the Series 7000 standard in early 2009 so installers can get certified as installers of residential fire protection systems.

The Series 5000 Working Group has drafted two new standards to be included in the Series 5000 – one is a standard for cross connection control program administrators, and one is a standard for testers for backflow prevention assemblies on fire protection systems.

The Series 6000 should have started its revision process this year; however, it has been postponed until 2009 when the new edition of the NFPA 99 is scheduled to be completed.

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In these economic times, ASSE is taking action in supporting our members and engineering community. Any unemployed Plumbing or Fire Protection Engineers and AutoCad Drafters, that are currently seeking employment, we are here to help. Please forward via e-mail your resume to Dom Agostino at dagostino@lilker.com.

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Buy American Act

UN History – The Buy American Act

In 1933, at perhaps the lowest point of the Great Depression, when profits were low and opportunities for economic growth bleak, President Hoover and the U.S. Congress enacted the Buy American Act (BAA), federal legislation that required the U.S. government to prefer American products in its purchases.

In today’s economic climate, U.S. manufacturers are working to ensure the country’s recovery will sustain one of our greatest assets, the American worker.

Today – The American Recovery & Reinvestment Act

Like the Buy American Act, a provision favoring U.S. produced goods was incorporated in the American Recovery & Reinvestment Act (ARRA) signed into law by President Obama on February 17, 2009. This legislation is intended to spur the economy, grow the number of job opportunities for American workers and lay the groundwork for changes that will ensure our country’s continued leadership in the 21st century. This law includes provisions favoring domestic sources. The Buy American provision included in this new bill establishes a general preference for goods produced in the United States.

This provision is designed to protect the American worker by saving and creating jobs with a requirement that project receiving these new federal funding purchase American-made goods whenever possible.

To achieve its mission, any project receiving federal funding created by the AARA is required to purchase American made products whenever possible. This will allow U.S. manufacturers to keep existing jobs in place while creating the potential for new job opportunities.

The Buy American Act Check List

The Buy American Act is design to ensure the American manufactured products are used on projects where public funds are being used. Please do your part to ensure that the Buy American Act and your specifications are complied with.

The rules are straight forward:

1. The basic item must be mined, produced or manufactured in the United States.
2. If the basic item is a casting, it must be cast in a U.S. foundry.
MADE IN AMERICA

3. It is not permissible to add the cost of U.S. machining, galvanizing, plating, painting or assembly to the cost of the foreign casting and claim that the foreign casting now qualifies as a product that meets the Buy American Act 50% cost rule.

4. An Assembly, that contains a foreign component, can only be classified as meeting the Buy American Act if the cost of the U.S. components exceed 50% of the total cost, excluding the assembly cost.

5. Packaging cost and/or transportation cost cannot be included in the cost calculations to meet the greater than 50% of cost rule.

Before you accept a submitted item as an “equal” on a Buy American specification, be sure to ask the right questions.

Submitted By:
Tony Penello of Dellon Sales
“Dellon Sales, Buy American Act Compliant”

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Conducting Plumbing Energy Survey
By: Joseph S. Petro, PIP, FASSE

Continued from the March bulletin...

- **Hot Water Service Equipment:** Commercial dishwashers and laundry machines use large quantities of hot water and have potential energy conservation features. An important feature of dishwashers is the pressure regulating valve. Is one provided and what is the pressure setting? Most dishwasher manufacturers recommend 20 psi on the booster hot water inlet connection to the dishwasher. At high pressures the rinse consumption is increased necessitating properly set pressure reducing valves. On commercial laundry equipment, heat reclamation of the rinse water waste offers energy saving large enough to consider reclamation equipment. Heat recovery for domestic use from steam condensate and other related HVAC systems are possible considerations, but are too complex to include in this presentation.

- **Summer Hot Water:** Summer hot water usage for domestic water heaters supplied by steam or hot water from main boilers should be analyzed. This occurrence happens in many schools with summer sports programs. Where boilers designed for heating large buildings are used during the summer to heat only nominal domestic hot water loads, they generally operate at low efficiency. Comparing the oil or gas consumed with the domestic hot water usage during the non-heating season is the basis for determining the boiler seasonal efficiency. Comparatively small domestic water heaters using oil or gas could be provided to permit the shutdown of the main boilers during this season. The present chimney or boiler breeching can be utilized, if necessary precautions such as electrical interlocks are provided on the boiler burners to prevent simultaneous operation with the new heater. Where the present water heater size can be minimized by circulating the heated water through the storage tank.

- **Insulation:** In energy surveys, the lack of insulation on the hot water piping systems and water heaters will suggest an ECM. Adding insulation to uninsulated piping and tanks can unusually be done within a reasonable payback period.

- **Fixture Flow Reduction:** Fixture flow rates vary with the supply fitting design and the water pressure. Fixture flow reduction is feasible in older buildings where fixture supply fittings have not been upgraded to current industry standards. Manufacturers test results show that flows can be quite high at lavatories and showers, the prime candidates for fixture flow reduction. Unrestricted flows at water pressures of 45 to 80 psi can range from about 2.5 GPM to as high as 19 GPM for lavatories and from 2 GPM to about 18 GPM for showers. This occurs monthly in older buildings where the fixture supply fittings are not up to the current industry standards. Naturally fixture usage is throttled to some extent, although single lever fixture controls (especially showers) tend to be used at almost full open. Average fixtures flows at blended temperatures should be measured at lavatories and shower heads. Filling type fixtures such as bathtubs, janitor sinks (to fill a cart or bucket) or kitchen sinks need not be considered for flow reduction. Flow rates can be determined by using a measured (1 gallon) open top jug and timing the filling period. For showers, the jug opening should fit over the head and for lavatories a funnel and hose need to be extended to the jug.

Fixture flow rates can be reduced by providing devices to control the flow or by replacing the fixture supply. The two basic types are automatic flow control fittings and flow restrictors. The auto flow control has a
pressure compensated orifice. In the past, our ASSE Standards Committee has been working on separate standards for these devices.

The location of the flow devices and the method of installation will affect the retrofit costs. On lavatories the type of faucets – combination, centerset or individual faucets – and the spout features, combination or plain end, will dictate the quantity and location of the devices. With plain end spouts the device must be located in each of the piping supplies and requires a significant amount of labor. With aerator or threaded spouts, the flow control device can be added in place of the aerator at nominal labor costs. In showers, the type of head – threaded to the arm or integral to the arm, or wall mounted without an arm – will be a factor in the flow device location and the retrofit costs. The most favorable and common type of shower arrangement is the threaded arm where the flow device can be inserted between the shower head and the arm at a nominal cost. In many instances, it may be easier to provide a low flow shower head replacement. On institutional wall mounted heads, the pipe nipple in the wall must be shortened to accommodate the flow control fitting and this adjustment requires more labor.

Flow rates for flow control devices must be carefully selected in existing buildings after the hot water distribution system is analyzed. On lavatory fixtures, unless the dead leg is reasonably short, too low a flow rate creates an unreasonable waiting period for hot water. New building agency and code requirements of 0.5 GPM flow devices on lavatories can be misleading and unsuitable for retrofit buildings. Reduced flow rates of 1 to 1.5 GPM are usually more applicable for existing buildings. For showers, a reduced flow of 2.5 GPM is the national standard flow requirement.

For computing annual hot water loads for present and reduced flows, the full population use must be taken into consideration. For lavatories, this calculation should also include the number of daily uses per person, the washing period and the flow rate. For showers, this calculation should include the number of uses per week, the showering period and the flow rate.

At specified fixture flow rates and constant outlet temperature, the ratio of hot to cold water varies according to the hot water system temperature. The “Fixture Flow Table” illustrates possible fixture flow rates and the percentages of hot water at the various temperatures:

<table>
<thead>
<tr>
<th>FIXTURE</th>
<th>HW TEMP.</th>
<th>TEMP. RISE</th>
<th>FLOW GPM</th>
<th>% HW</th>
<th>HW GPM</th>
<th>OUTLET CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lav.</td>
<td>140</td>
<td>90</td>
<td>4.5</td>
<td>.61</td>
<td>2.75</td>
<td>Open spout</td>
</tr>
<tr>
<td>Lav.</td>
<td>140</td>
<td>90</td>
<td>3.0</td>
<td>.61</td>
<td>1.83</td>
<td>Open spout</td>
</tr>
<tr>
<td>Lav.</td>
<td>140</td>
<td>90</td>
<td>2.46</td>
<td>.61</td>
<td>1.50</td>
<td>1.5 GPM FC inlet</td>
</tr>
<tr>
<td>Lav.</td>
<td>140</td>
<td>90</td>
<td>0.5</td>
<td>.61</td>
<td>0.31</td>
<td>0.5 GPM FC spout</td>
</tr>
<tr>
<td>Lav.</td>
<td>120</td>
<td>70</td>
<td>4.5</td>
<td>.79</td>
<td>3.56</td>
<td>Open spout</td>
</tr>
<tr>
<td>Lav.</td>
<td>120</td>
<td>70</td>
<td>3.0</td>
<td>.79</td>
<td>2.37</td>
<td>Open spout</td>
</tr>
<tr>
<td>Lav.</td>
<td>120</td>
<td>70</td>
<td>1.9</td>
<td>.79</td>
<td>1.50</td>
<td>1.5 GPM FC inlet</td>
</tr>
<tr>
<td>Lav.</td>
<td>120</td>
<td>70</td>
<td>0.5</td>
<td>.79</td>
<td>0.40</td>
<td>0.5 GPM FC spout</td>
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<td>.92</td>
<td>0.46</td>
<td>0.5 GPM FC spout</td>
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</table>
Shower  | 140  | 90  | 8.0  | .61  | 4.80  | Unrestricted  
Shower  | 140  | 90  | 5.0  | .61  | 3.05  | Unrestricted  
Shower  | 140  | 90  | 2.5  | .61  | 1.53  | 2.5 GPM FC/Shower head  
Shower  | 120  | 90  | 8.0  | .79  | 6.32  | Unrestricted  
Shower  | 120  | 90  | 5.0  | .79  | 3.95  | Unrestricted  
Shower  | 120  | 90  | 2.5  | .79  | 1.98  | 2.5 GPM FC/Shower head  
Shower  | 110  | 70  | 8.0  | .92  | 7.36  | Unrestricted  
Shower  | 110  | 70  | 5.0  | .92  | 4.60  | Unrestricted  
Shower  | 110  | 70  | 2.5  | .92  | 2.30  | 2.5 GPM FC/Shower head

**Flow is based** upon 50° cold water inlet and 105° outlet temperature at 45 psi water pressure. FC denotes automatic flow control device. In the above table, note that the proportion of hot water increases at lower temperatures. This does not affect the Btu’s at the fixture outlet but it will affect the hot water storage capacity of the storage heater.

**Maintenance and Operation:** The building operating personnel should be questioned to determine if any energy conservation measures are being implemented or proposed. Maintenance practices and problems of the domestic hot water systems should be discussed. A careful building survey can disclose worthwhile savings at nominal costs. For example, on water heaters, defective relief valves, leaking manhole gaskets, leaking tanks and missing portions of insulation are common problems. These defects are especially likely to be overlooked in campus type building complexes where the maintenance staff is minimal and the heaters are in remote locations. A typical example I have encountered was a remote heater installation where the relief valve is discharging 200°F water at the rate of 2 GPM for an unknown time period. Not only is this wasteful, but the temperatures are dangerous to the building occupants. Another example is steam storage type heater which was leaking approximately 15 GPM of 140°F hot water for at least 3 or 4 months. The heater replacement costs were minor in comparison to the energy savings.

In conclusion, a building must be completely surveyed and its usage carefully analyzed in order to prepare proper energy calculations that will lead to useful energy audit. Calculations should be conservative because of human habits. It is better to underestimate savings than to mislead a client into believing he will achieve higher theoretical savings.

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*In the energy field, Mr. Joe Petro has performed surveys and prepared reports for industrial plants, postal facilities, hospital complexes, colleges, office buildings, apartments, telephone and utility company buildings and entire military bases.*
## New York Chapter
American Society of Sanitary Engineering

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<td>Vincent Armenti</td>
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<td></td>
<td>James Nesbitt</td>
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### COMMITTEE CHAIRPERSONS - 2010

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<tr>
<th>Committee</th>
<th>Chair</th>
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<tbody>
<tr>
<td>Past Presidents Committee</td>
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<td>(212) 556-3462</td>
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### ASSE EVENT COMMITTEES - 2010

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<tr>
<td>ASSE/ASPE Fishing Trip/Field Trip</td>
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