

AWWA Mainstream

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Board Creates New Divisions

The AWWA Board of Directors met January 25-26 and, among other items of business, selected William O. Lynch vice president-elect.

Revisions to the Governing Document included creating Education, Engineering and Construction, and Research divisions, and dissolving those technical and professional committees. Representatives from the new divisions on research and engineering were added to the Standards Council.

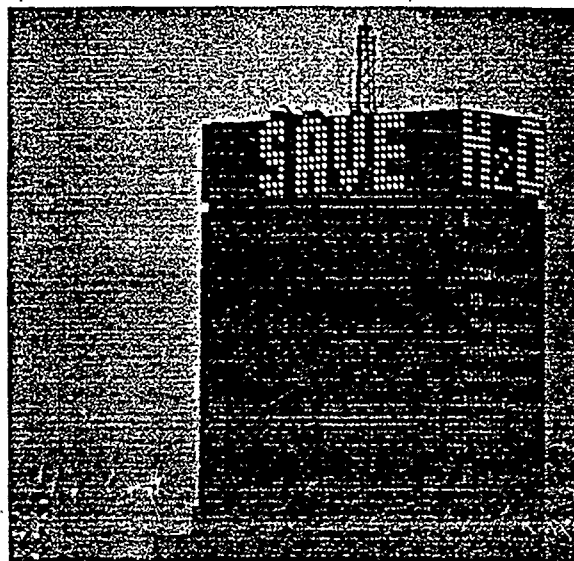
A geographic and occupational balance is now encouraged in the General Policy Council, and director members are now permitted to be either past or current directors. Other revisions included the elimination of free publications to delinquent members, the addition of a regulatory agency representative to the Technical and Professional Council, the discharge of the Government

Affairs Committee, and the establishment of operating procedures for ad hoc and administrative committees.

The board also approved the following meeting sites: Milwaukee, Wis., for the 1982 Distribution System Symposium to be held Mar. 7-10, 1982; Orlando, Fla., for the 1984 Board of Directors meeting; and Philadelphia, Pa., for the 1988 annual conference.

Six standards, including one addendum, were presented to the board for action. Two new standards were approved, C550-81, Protective Interior Coatings for Valves and Hydrants, and C950-81, Glass Fiber-Reinforced Thermosetting Resin Pressure Pipe. Also approved was C303a-81, Reinforced Pressure Pipe—Steel Cylinder Type, Pretensioned, for Water and Other Liquids, which is an addendum to C303-78. Revisions of three

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Philly Flashes Conservation Message

"SAVE H₂O" brightens up the night sky in Philadelphia where the Philadelphia Electric Co. has joined the city's efforts to combat the drought in the Delaware River basin. Other areas in the basin, particularly in New Jersey, have suffered as well. SEE RELATED STORY, PAGE 3.

Colorado Attorney Nominated to Head EPA

Two months of speculation ended with the announcement of Anne McGill Gorsuch's nomination for administrator of the US Environmental Protection Agency.

Gorsuch, 38, is a lawyer for Mountain Bell in Denver and served in the Colorado state legislature from 1977 through 1980, where she was active in committee work on major industrial and automobile pollution legislation. She participated on President Reagan's transition team as a member of the advisory committee on intergovernmental relations.

Gorsuch is reported to be a compromise choice for the top job at the USEPA after a deadlock occurred over two other candidates. Some opposition to her nomination has surfaced, primarily from environmental groups like the Sierra Club who doubt her qualifications. In addition, she has come under fire in the columns of

several Washington newspapers.

Despite the rough waters, most Washington observers expect her to be confirmed. As of late March, however, the nomination had not been officially submitted to the Senate for confirmation. Many of Reagan's appointments have been delayed by slower than



Anne M. Gorsuch

normal security checks and political screenings.

Gorsuch was selected the outstanding freshman legislator by her colleagues and the members of the press covering the statehouse in 1977. She emerged as a leader of the new young Republicans at the capitol.

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EPA's 2nd Spot Goes to AWWA Member

President Reagan has nominated long-time AWWA member John W. Hernandez for the position of deputy administrator of the US Environmental Protection Agency.

Hernandez, who served as dean of the college of engineering at New Mexico State University from 1975 to 1980, is an engineer who can bring exten-

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AWWA Dues: A Comparative Bargain

Predictors are saying the double-digit inflation of the past few years will continue to snap at our heels well into the '80s.

Last year AWWA responded to this discomforting fact of life—as did many other professional associations—by raising membership dues. The annual assessment for AWWA's basic membership was raised from \$32.50 to \$43, an increase of 32 percent.

In 1980 another water group, the National Water Well Association, raised its \$50 membership fee to \$100—a staggering increase of 100 percent.

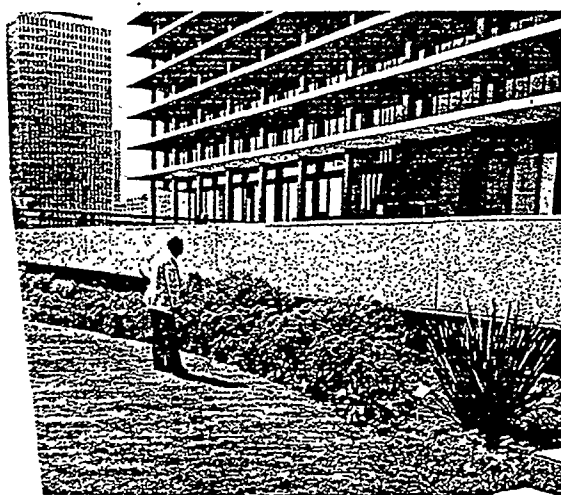
The New England Water Works Association went from \$25 to \$30 for an increase of 20 percent, and membership in the American Public Works Association rose from \$35 to \$45, for an increase of 29 percent.

AWWA, however, stands apart from these associations by virtue of the large number of benefits it delivers—all at no add-on cost. AWWA members receive subscriptions to all periodicals, reduced rates on workshops, the counsel of the Washington, D.C., office, employment listings in *AWWA Mainstream*, ... the list goes on. Staying current and

informed through AWWA oftentimes costs less than what other associations charge for their services. AWWA's \$43 membership fee compares very favorably with the \$75 charged by the National Association of Water Companies and the \$82.50 fee of the Institute of Transportation Engineers. The American Society of Safety Engineers charges a yearly fee of \$55, while both the International City Management Association and the Municipal Finance Officers Association assess their members \$50 each year.

Finally, a comparison with professional associations more removed from the water industry shows that they usually increased membership dues at least as rapidly as AWWA, if not more so.

The National Safety Council increased its dues from \$100 to \$125 in 1980 and will raise them to \$200 in 1981—a full 100 percent above the 1979 level. And in 1980, the American Libraries Association membership went from \$35 to \$50 (a 43 percent increase); the Special Libraries Association went from \$40 to \$55 (a 38 percent increase), and the American Medical Writers Association went from \$35 to \$45 (a 29 percent increase).



Higher (Drought) Consciousness in LA

vation garden, displaying 39 varieties of drought-resistant, water-saving plants, and grasses, was dedicated by Los Angeles' Mayor Tom Bradley on March 26. A 'the Department of Water and Power, the garden is located in front of the headquarters in downtown Los Angeles. Incorporating the latest in efficient techniques, the display is the first of several landscaping changes planned for facilities that include water-conserving plants.

Letters

To the Editor:

We notice with some delight that your new, monthly newsmagazine will be called *AWWA Mainstream*. We think the name *Mainstream* is certainly an appropriate one for water utility application and have used it for approximately a year here at the Louisville Water Company for our employee newsletter.

A good name seems even better when someone else likes it too.

Jerry R. Ford
Assistant Secretary and
Administrative Assistant
Louisville Water Company
Louisville, Ky.

To the Editor:

The smiles we are wearing today are due to seeing our "Water Waste Watcher" school program in [February's] publication of *Willing Water*.

We certainly appreciate your organization's efforts in providing other members of AWWA an insight to our program.

Should you have any questions from your readers concerning various materials used in the program please do not hesitate to contact me or Raymond E. Green Jr.

Many thanks ... you made our day!!

C.L. Koester
Manager Customer Service
Stamford Water Co.
Stamford, Conn.

Next Month... EMGM's Final Awards

One of the longest, most productive membership recruiting campaigns in association history officially ended April 1. During the five-year program more than 20 000 new AWWA members were signed up.

Preliminary statistics indicate that the California-Nevada Section has won two first place awards in the fifth year of the EMGM "Every Member-Get-A-Member" campaign. AWWA's largest section is the apparent victor for most new members and for best individual recruiter, Bob Keiser.

Taking the third major recruiting award—best percentage membership increase—is the West Virginia Section.

The winners will receive awards during the centennial annual conference in St. Louis in June.

Next month, when final calculations are verified, *AWWA Mainstream* will present a special report on the full five-year EMGM effort.

Blake Jeffcoat of the Alabama-Mississippi Section, chairman of the AWWA Membership Committee, said EMGM has demonstrated clearly that a sustained recruiting drive is possible. He urged sections and individual members of AWWA to maintain the growth curve.

"We probably won't launch another long-term project like EMGM," Jeffcoat said, "but the lessons it's taught us about recruiting new members will help sustain AWWA for years to come."

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AWWA utility members and municipal service subscribers are invited to call upon the association's Washington staff for advice, information, and assistance in dealing with federal agencies and programs. Please direct inquiries to C. Atkinson Jr., AWWA Deputy Executive Director—Government Affairs, 485 National Press Building, Washington, D.C. 22045; 202-628-8303.

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Environmental Regs Save Water...and Money

Is there life after environmental regulation? Some corporations and utilities, reeling from the successive cost-crunches of recent years, are now seriously asking themselves this question.

However, quick-reacting and innovative companies like the Schering-Plough Corp. of Union, N.J., have shown that not only can environmental protection and the profit-making motive coexist, but that the regulations themselves can sometimes have a money-saving—as well as a water-saving—effect.

Schering-Plough manufactures pharmaceutical chemicals, which require large amounts of water.

Schering has cut water consumption 1.6 percent... increasing production 30 percent.

The remarkable statistic is that Schering has cut its water consumption 1.6 percent in the past four years, while at the same time increasing its production activity by a healthy 30 percent.

"We have a very active resource conservation program, in general, and that includes water conservation," said William F. Shay, water



Russel Lenzafame, left, a Schering engineer sharing responsibility for the plant's water management, reviews conservation data from a nonpotable recycling plant, shown in the background, with Frank Matulonis, a local power utility employee.

management engineer for the corporation's Schering division. "We've probably been involved in water conservation

for about four or five years... although some conservation programs weren't as active as

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Washington Report

Washington Report is prepared by the AWWA Government Affairs Office to inform AWWA members about federal programs and legislative and regulatory actions related to the water industry. Inquiries should be directed to AWWA Government Affairs Office, 485 National Press Bldg., Washington, D.C. 20045; telephone 202-628-8303.

The Administration

On Feb. 17, 1981, President Reagan signed an order imposing new rules on federal regulators. The executive order directs that regulations be issued only when essential and requires that a "least costly" approach be followed. The order is expected to have the greatest effect on the US Environmental Protection Agency, the Occupational Safety and Health Administration, and the National Highways Safety Administration. It does not affect independent agencies, such as the Federal Trade Commission.

The order requires agencies to identify "major" rules issued or under consideration that will have a cost impact of \$100 million or more or that lead to major increases in consumer prices or industry costs. Major rules must be accompanied by a regulatory impact analysis identifying the potential costs and benefits of the rule, as well as a description of alternative approaches that could achieve the same goal at lower costs.

The order extends the 60-day regulatory freeze implemented by the President on January 29 and directs that major new rules that have been approved by executive branch agencies, but not yet in effect, must be postponed until the regulatory analysis is completed. Regulations issued under a legislated or court-ordered timetable or issued in response to an emergency situation are exempt.

The order also requires agencies to review existing major rules.

Congress

Congressman Phil Gramm (D-Texas) soon will introduce a bill to amend the Safe Drinking Water Act. Similar to H.R. 4509 introduced during the 96th Congress, this bill will address the control of constitu-

(continued on page 4)

New Jersey's Appeal to Reagan for Disaster Aid Denied: State's Vulnerability to Drought Due to Poor Planning

Before some unusually heavy February rains helped ease a five-month drought, New Jersey was at the brink of water system failure. At that time, New Jersey's Governor Brendan Byrne asked President Reagan for up to \$150 million in federal disaster aid.

On March 3, the federal government denied the request, citing the ameliorating effect of the February rains. Combined storage in northeastern reservoirs has risen from 20 to 64 percent of capacity. However, the New Jersey drought is by no means over; normal levels for early March are between 90 and 95 percent of capacity.

The northern part of the state has been under mandatory water rationing since September 27. New Jersey's drought problem began much earlier and was more acute than the droughts of other states in the Delaware River

Basin Commission.

The governor attributed New Jersey's particular vulnerability to drought to basic flaws within the state's water management structure. Byrne has asked the state legislature for a more powerful and centralized water planning agency to administer the more than 600 water utilities within the state. He also has proposed a \$345 million bond issue to construct four new reservoirs and two new transfer pipelines.

As part of Byrne's request for disaster aid, New Jersey would have paid back \$100 million of the \$150 million disaster package. The \$100 million had been earmarked for getting a head start on construction projects to ease the current crisis.

Rich Vespucci of Governor Byrne's office said that the disaster aid application included a number of "stop-gap emergency projects."

Said Vespucci, "Unfortunately, the only way we are going to get the federal aid would be after the fact at this point. It's a shame that people may have to suffer."

Passage of the governor's \$345 million plan by voters next November would help avoid this kind of crisis in the future. There are indicators that the New Jersey public may at last be aware of their state's water planning problem. Since the February rains, residents in the hardest hit areas have been maintaining a daily water-saving rate of 15 to 18 percent. This compares to a 5 or 10 percent rate for a good day during the conservation program's first months.

Vespucci sees this trend as "really encouraging, considering that—unlike Arizona or New Mexico—this is a population that never really needed to have an ongoing conservation ethic."

WASHINGTON REPORT: (continued from page 3)

ents in water only if they represent an unreasonable risk to human health, provide specific definition regarding the availability of treatment techniques and USEPA's authority to specify the use of such technology, and strengthen state primary enforcement responsibilities whenever the USEPA revises or amends drinking water regulations.

Speaking before AWWA's Water Utility Council during its meeting in Washington in March, Congressman Gramm said that "time ran out" for the bill during the 96th Congress. Currently, representatives from AWWA, the Council of State Sanitary Engineers, and the National Association of Water Companies are meeting to coordinate support for the new bill, which will also be designated H.R. 4509.

OWRT and WRC in Trouble

The administration plans to eliminate the funding for the Office of Water Research and Technology and the Water Resources Council. Many of the program functions of these

organizations will be transferred to a new office of national water policy in the US Department of Interior's Water and Power Resources Service. There will be only a small appropriation request for the new national water policy office, however.

Water Resources Research Priorities for FY 1982

A report of the Water Resources Research Review Committee of the National Research Council lists the following as "critical priority" water resource research areas:

Significance of trace contaminants to human health.

Effects of contaminants on eco-systems and species.

Effects of pollutants in marshes, estuaries, and oceans.

Options for water use.

Control of contaminants resulting from energy development.

Institutional arrangements for reallocation of water.

Institutional arrangements for groundwater management—quality and

quantity.

The impact of the new administration's proposed budget cuts upon these research projects is not known yet.

National Toxicology Program

The National Toxicology Program develops scientific information about potentially toxic and hazardous chemicals. This information is used for protecting the health of people and for the primary prevention of chemically induced disease. It also provides the necessary toxicology information needed by research and regulatory agencies. The overall program includes the programs of the National Cancer Institute, the National Institutes of Health, the National Institute of Environmental Health Sciences, the National Center for Toxicological Research, and the National Institute for Occupational Safety and Health.

The Feb. 27, 1981 issue of the *Federal Register* contains some very interesting reading

concerning the NTP annual plan for fiscal year 1981, the overall program, and chemicals that are being tested under the program.

Superfund Law

Public Law 96-510 was passed Dec. 11, 1980. It provides that within 180 days after enactment, any person who owns or operates or who, at the time of disposal, owned or operated a facility at which hazardous substances had been stored, treated, or disposed of shall notify the USEPA administrator of the existence of such a facility, unless permitted or granted interim status under the Solid Waste Disposal Act. The notifier must specify the amount and type of hazardous substance at the facility, as well as any known, suspected, or likely release of such substance from the facility. Anyone failing to notify USEPA is subject to a fine of not more than \$10,000 or imprisonment for more than one year or both. A key element of the law is its retroactive aspect.

Water Utility Managers and Salary Administrators will find:

THE 1981 SURVEY OF WATER UTILITY SALARIES, WAGES, AND EMPLOYEE BENEFITS

INVALUABLE WHEN PREPARING THIS YEAR'S BUDGET

The complete up-to-date reference of water utility salaries, wages, and benefits is available NOW!

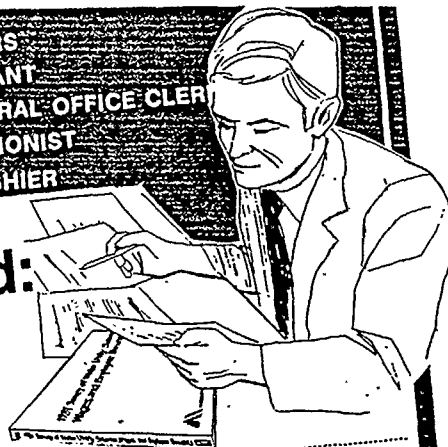
The American Water Works Association offers you this valuable reference that provides current statistics compiled from 1,100 member utilities on salaries of office and supervisory personnel and wages of construction, maintenance, and service classification.

Although this is only the second survey in 7 years, overwhelming demand sets this year as a precedent for annual release of the manual.

The survey is a compilation of personnel statistics from water utilities throughout the United States. Listings are subdivided into nine regional sections and categorized by the size and location of the utility.

The easy-to-use reference format makes the 1981 Survey of Water Utility Salaries, Wages and Employee Benefits a necessity for the successful hiring of personnel.

ORDER FORM TO: AWWA Publications Dept., 6666 West Quincy Avenue Denver, Colorado 80235



Send me _____ copies of the 1981 Survey of Water Utility Salaries, Wages and Employee Benefits (catalog No. 20216 NA)

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\$100 000 Challenge Issued to Research Foundation

Robert McGarry, general manager of the Washington Suburban Sanitary Commission, has pledged \$100 000 of the Maryland utility's budget to the AWWA Research Foundation's current fund-drive—on the condition that other utilities contribute at least a matching total of \$100 000.

If the \$200 000 is raised before June, the foundation will launch two major projects. One is a computerized system that can rapidly transfer research technology information between utilities. The other is an international organics monitoring program with the eventual purpose of influencing organics regulations.

These two research areas, along with six others, were identified as "first order priorities" at a foundation-sponsored workshop. Held in October 1980, the meeting was attended by 55 utility, research, and consultant representatives from the water industry.

The technology transfer system would give foundation members instant access to a far wider spectrum of water research than is currently available. Included within this continually updated information base would be abstracts of completed and published research projects, completed but unpublished projects, updates of long-term projects, and projects that have just begun.

Also abstracted as part of the technology transfer would be ad hoc or informal research projects intended for in-house use only. The foundation is hoping researchers will report unsuccessful as well as successful studies—so that other members can avoid duplicating unproductive efforts and save precious research dollars.

To ferret out unsuccessful or ad hoc research, the foundation is considering what it calls an "active" system of collecting information. Under this approach, a foundation staff member would visit the various organizations, evaluate the research first hand, and write up the summaries to be entered into the data base.

A hypothetical example illustrates the technology transfer program.

A utility in Lowell, Mass., has decided to embark on a

leak detection program to save money. After careful consideration of various detection techniques, the engineers choose an acoustical method. Not far into the program, they find some unanticipated background noise is preventing accurate interpretation of the data.

Lowell's utility manager calls the AWWA Research Foundation's toll-free number and explains his problem. The appropriate codes are entered into the computer, and within minutes, five research abstracts pertaining to acoustical interference in leak detection are at hand.

Each abstract includes the name and telephone number of a person to contact for additional information.

Looking over the abstracts, Lowell's utility manager sees that utilities in Toronto and Denver have encountered similar problems, tried a number of alterations, and finally abandoned the technique as too expensive. A university in Florida is halfway through an extensive research project involving acoustical interference. Utilities in Los Angeles and Oakland are having some success circumventing interference by recording with sixteen microphones and then correlating the tapes electronically.

After reading the Denver

and Toronto abstracts, Lowell's manager scraps several possible solutions he had been considering and calls the Florida university and the California utilities for their advice.

The ultimate goal of the technology transfer program is to close the existing gap between research and the practical application of that research. Scientists have traditionally published their results for the exclusive scrutiny of their fellow scientists.

Although this is desirable, it also limits practical application of the findings. The foundation would like to consistently present results in a manner that is clearly understandable to those who would apply them in the field.

The second project to be funded by the foundation's current drive is an ongoing program to internationally monitor organics. Its main goal is the development of a large data base on organics in drinking water.

This data base would have two benefits. The US Environmental Protection Agency typically bases regulations on its own research. Presently,

the water industry cannot respond to USEPA's data and regulations with any kind of broad-based, specific data of its own. Such a data base could influence the direction and scope of future USEPA regulations.

More immediately, this compiled organics data could be useful to an individual utility as a point of comparison with other utilities. For example, suppose organics monitoring in Louisville starts indicating small traces of several volatile halogenated compounds in the raw river water. Monitoring farther upstream in Cincinnati, however, does not show any of these traces. Such findings might be reason enough to begin an investigation of waste disposal practices between the two cities.

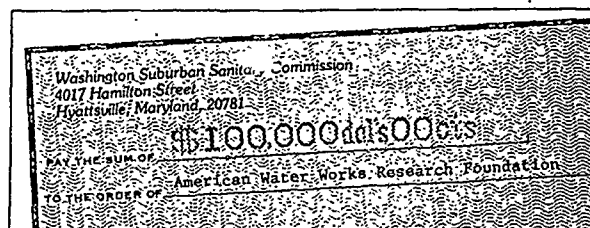
Strong support for an organics monitoring program was expressed in a pledge letter from the Continental Water Co. of St. Louis. Their \$5000 contribution was the first of the matching donations to be applied to McGarry's \$100 000 challenge.

In the past, the AWWA Research Foundation has had to rely entirely on voluntary contributions from interested parties and an occasional government grant for a specific project. Clearly, funding of this type could never sustain any kind of active, ongoing research.

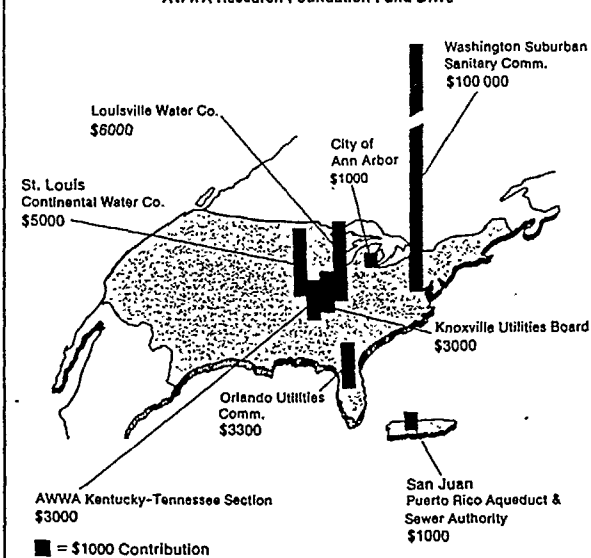
The foundation and its members feel it is time to shift gears—to take a more aggressive approach in gathering and interpreting data. A more comprehensive, industry-financed research program could finally take the initiative in solving water supply problems.

Any size contribution will be welcomed. A suggested guideline for utilities, however, is \$0.05 per service connection. Such an assessment would more equally distribute this voluntary funding among major users of the foundation's services.

Contributions, in either check or pledge form, can be mailed to the AWWA Research Foundation, 6666 W. Quincy Ave., Denver, Colo. 80235.



AWWA Research Foundation Fund Drive



GC SUCHE TO HEAD EPA (continued from page 1)

During her four years in office, she served—at various times—as chairwoman of the state affairs committee, the legal services committee, and

'Standard Methods' Delayed

Production problems have delayed the printing of *Standard Methods for the Examination of Water and Wastewater*, 15th ed. The book is now on press and should be ready for delivery by early May. AWWA's apologies to everyone who ordered the book when its expected availability was first announced.

the interim committee on hazardous waste; as vice chairwoman of the judiciary committee; and as a member of the committees on finance, appropriations, and transportation and energy. Gorsuch is best known in Colorado for her work on the revision of criminal-sentencing laws.

Before joining the telephone company, Gorsuch acted as an administrative judge for several state agencies and became familiar with regulatory procedures. Between 1968 and 1973, she worked in the district attorney's offices for Jefferson County (a Denver suburban area) and for the city of Denver.

She is a member of the National Commission on Uniform State Laws, the Board of Directors of the Denver YMCA, and the Civic Advisory Board of Mercy Hospital. She also sits on several committees for the Denver and American Bar associations.

Gorsuch is a graduate of the University of Colorado with a bachelor's degree in political science and a law degree. She spent a year in India as a Fulbright Scholar.

Natural Resources Trade: Middle East Oil for Water

Some Arab states are apparently negotiating to exchange some of their oil for another liquid that is in short supply in that part of the world—water. Companies in Zimbabwe and the Philippines are drawing up plans to trade their processed water directly for black crude.

According to *Export Week*, a trade publication based in Manila, a Filipino company called Ciescor will handle that country's oil-water bartering with Saudi Arabia.

Located in the duty-free zone of Davao, Ciescor will process nearby river water and ship it in oil tankers equipped with special containers that can carry oil on the return trip. Saudi Arabia will use the water in beverages, hospitals, batteries, boilers, and radiators.

In Zimbabwe, an enterprising businessman is planning to market a Perrier-type of mineral water in a number of Arab countries. But he needs his government's backing to do so.

The *Los Angeles Times*

reports that Nick Malachias, a Salisbury engineering company and nightclub owner, is dickering with Zimbabwean officials to provide the capital-intensive facilities necessary to transport and manufacture containers for his water project.

If he is successful, Malachias thinks the water-marketing project could be a financial boon to his country—possibly becoming a bigger foreign exchange earner than tobacco. And if government is involved, he also thinks he might end up swapping African water for Arabian oil.

In an effort to duplicate the touted French product as closely as possible, he is subjecting Perrier and other mineral waters to laboratory analysis. France, Spain, and Greece currently supply the Middle East with water at about \$4 a litre. Malachias plans to get a share of the market by undercutting that price and producing a higher-quality water than the Europeans.

REGULATIONS SAVE WATER, MONEY (continued from page 3)

the fuel conservation program that we have."

It is no fluke that Schering and other chemical-producing companies are now the corporate masters of the art of water management. The 1977 amendments to the Clean Water Act required Schering to get a federal permit for the plant's wastewater—water that is eventually dumped into the Elizabeth River after some very expensive treatment. Company engineers readily admit that they pay as much to get rid of water as they do to buy it.

... bottom line caused Schering to look closely at water recycling.

It was this kind of bottom line that caused Schering to look closely at water recycling. The company eventually invested \$350 000 in a system to recycle noncontact cooling water, or water that is separated by pipes and heat transfer materials from the substances it cools.

Looking back at the requirements of the waste-

water permit and Schering's decision to recycle, Shay commented, "We had to consolidate our cooling water outfall, and when we did that—we thought now that we have it all in one place, let's look at recycling."

"The recycling project was justified on its own ..."

"The recycling project was justified on its own, even though it had a longer payback than most of our capital investments. It'll be a payback, but it will be a six- or seven-year payback."

The company estimates its demand on the Elizabethtown Water Co. for potable water will be reduced by 8 percent annually, and the demand on Schering's own wells for non-potable water will be reduced by 19 percent each year.

... demand for potable water will be reduced by 8 percent annually ...

To further reduce consumption of costly potable water, Schering switched to using its

own nonpotable water whenever possible. The high mineral content of the nonpotable water sometimes caused energy consumption to increase, however, because frequent flushing of equipment and additional water treatment became necessary.

Nevertheless, Shay optimistically noted that "it is not a break-even system yet, because we've only had it for a short period of time and we've had only minimal experience."

This all-inclusive attitude toward conservation has also resulted in a number of house-keeping measures designed to cut Schering's consumption of potable water. Flow restrictors and flushometers in bathrooms, less frequent flushing of sewers, no lawn watering, and the elimination of vehicle washing have all helped the company meet New Jersey Governor Brendan Byrne's order for a 25 percent cutback in industrial water use for the duration of the drought. (See related story page 3.)

A crucial step in achieving this usage reduction was Schering's decision to sharply increase metering by about 50 percent. Shay felt that, without

the basic data, not much could be found out about the plant's use of its needs. This meant usage data had to be accumulated for a period of years, not just months.

... stepped-up metering alone has cut water use by about 10 percent.

The 50 percent increase in metering translated into the addition of 30 meters to Schering's water system at a cost of \$50 000. Shay estimated the stepped-up metering alone has cut the company's water use by about 10 percent.

Schering-Plough and other chemical companies are being cited as drought-adaptive models by the state government. Officials hope that other businesses in northern New Jersey will follow Schering's suggestions.

Aside from this, Schering's experience indicates that as water becomes more precious—or its disposal becomes more costly—corporations can learn to save water and sometimes money without an adverse effect on production levels.



AWWA Kicks Off Second Century With Homage to First

Jazz, foamy tankards, the rolling Big Muddy, old-fashioned harmony, the drama of pennant competition—this is a part of the essence of St. Louis that will become the spirit of ACE 1981.

Returning to the place of its birth for this historic celebration, AWWA is planning special activities, decor and exhibits, in addition to an excellent technical program.

A stately but colorful and fast-paced program is planned for the opening general session. Bunting and bugles will herald AWWA awardees and a not-to-be-missed keynote speaker.

Happy birthday, AWWA! A cake-cutting will start off the exposition opening and "meet & greet." Attendees will enjoy a *Biergarten* setting, complete with German folk dancers, ragtime bands and of course beer, before visiting the exhibits.

Annual banqueters will don "boaters" and join in a barber-shop sing-along. Song lyrics printed in a souvenir menu will prompt post-gramophone harmonizers. Ragtime music will recall the atmosphere of the riverfront and the

ethnic culture of the city.

Old and new will come together in the Theme Center, located in the exhibit hall. A turn-of-the-century "centennial village" is the backdrop for an exhibit of vintage waterworks equipment. The antiques, loaned by AWWA members across the country, show how far the industry has come over the years.

The "village theater" has an exclusive on a new AWWA sound-slide show. The show tells the story of AWWA's past accomplishments and future goals, and another display of still photography gives a concise visual account of AWWA functions and services.

Free afternoons and evenings will be what you make them; choose from showboat cruises, champagne dinners, nightlife, museums, brewery tours, sports . . . St. Louis has it all. Representatives from the St. Louis Scene will be in the registration area to help with plans and reservations.

A full schedule of activities is planned to acquaint spouses with the many facets of St. Louis. After the bustle of downtown, spouses will enjoy a relaxing afternoon at the

Missouri Botanical Gardens, followed by a historic homes tour. Also scheduled is a St. Louis highlights tour, ending with a Saint Louis Symphony "pops" concert. Many optional tours and activities can be arranged for those who wish to explore further AWWA's centennial city.

As an enduring commemoration of the event, a bronze casting of the centennial emblem will be added to the stone marker already in place at Washington University. It was at the University that AWWA founding fathers met on Mar. 29, 1881. A small ceremony including AWWA officers, board members, and university officials will mark the addition to the monument.

Every conference attendee will have the opportunity to take home a permanent memento of the centennial. A special commemorative magazine will be distributed free to all technical registrants. It will be on sale to others at the conference or by mail order. The magazine contains more than 100 pages of articles, photographs, and illustrations recounting the past and commenting on the future of the

water industry and AWWA.

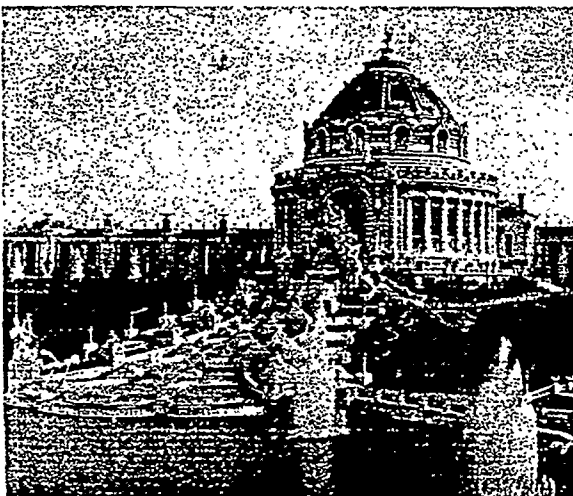
Other souvenir items can be purchased at the conference or from headquarters.

One thing every conference attendee can take with him is the spirit of the centennial. This "spirit" has a lot in common with the spirit of St. Louis. A lesser known story from the annals of water treatment history illustrates this.

At the turn of the century, St. Louis was atwitter making plans for the World's Fair. The centerpiece of the fairgrounds was to be a baroque display of fountains and cascades. This grand scheme had a serious drawback; the only water source was the muddy Mississippi.

The water department hired John F. Wixford, a genius of sorts with eccentric habits, to investigate the problem. Wixford went to work and soon came up with a new clarification process. It worked like a miracle on the turbid water.

A St. Louis native, Wixford had the pioneering spirit of the gateway city. This spirit of innovation and dedication will inspire AWWA members for another 100 years.



Because of Wixford's new clarification process, clear water trickled from the fountains in front of Festival Hall and quenched the thirst of visitors to the 1904 World's Fair.

Distinguished Panel Closes Conference at Second Century Luncheon

The newest feature of AWWA's annual conference is the Second Century Luncheon.

The luncheon will be held on Thursday, June 11, in place of a closing session. A panel of water industry experts will answer questions in a press-conference style—AWWA's version of "Meet the Press." Panelists will include Henry J. Graeser, James LaFrankie, and Daniel Okun. AWWA planners also hope to include John Hernandez on the panel.

Graeser, who was president of AWWA in 1967-68, is a consulting engineer with the firm of Black & Veatch. John Hernandez of New Mexico has been nominated by the Presi-

dent to be assistant administrator for the US Environmental Protection Agency.

LaFrankie is president of the largest privately owned water utility in the United States, the American Water Works Company, and Okun is well known as a researcher, author, and professor of environmental engineering at the University of North Carolina.

The luncheon at the St. Louis Sheraton will be served at 12:30 p.m., and the panel will begin at 1:30 p.m. Tickets are \$10 for members and \$15 for nonmembers. Spouses and others not registered for the technical sessions are welcome at the luncheon.

Glen Echo Course to Challenge Centennial Golfers

To 100 AWWA golfers, St. Louis will open the gates of the oldest country club west of the Mississippi for a day of competition and camaraderie.

The AWWA Centennial Conference Golf Tournament is scheduled for Monday, June 8, at the beautiful Glen Echo Country Club. Buses will leave

the Cervantes Convention Center, headquarters of the annual conference, at 9 a.m. in time for a shot-gun start on the course at 9:45 a.m.

The Calloway system, which is a scoring method devised for golfers who do not know their handicap, will be used. Prizes will be awarded before participants return to the convention center.

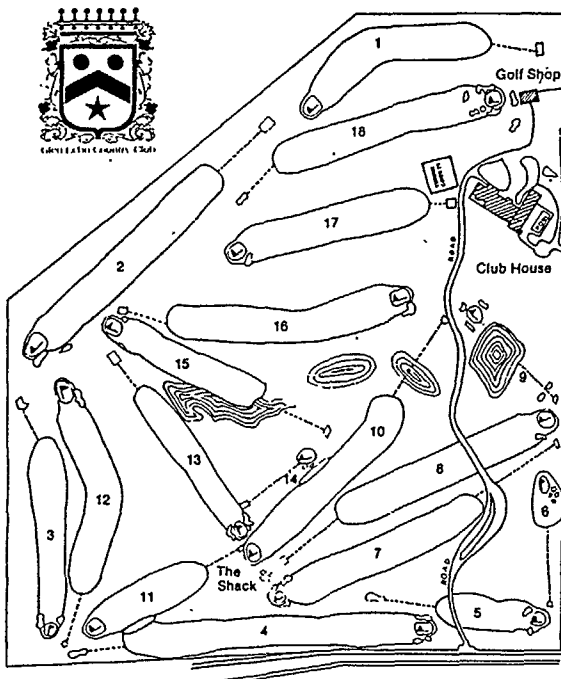
Included in the \$35 entry fee are the transportation, and greens fees, electric cart, and an informal lunch of hot dogs and hamburgers, beer and soft drinks at the Shack on the

10th hole.

Participants will be grouped in foursomes on a first come, first served basis. Pre-registration is preferred, but late signups will be accepted at the convention center on Sunday, June 7, as long as there is still space available.

To preregister, fill out the application and send it to D.J. Costello, AWWA Golf Chairman, American Foundry & Mfg., 920 Palm St., St. Louis, Mo. 61346. Be sure to include your address and telephone number as well as any others in your foursome.

Glen Echo Country Club



AWWA Centennial Conference Golf Tournament

Mail to: D.J. Costello
AWWA Golf Chairman
American Foundry & Mfg.
920 Palm St.
St. Louis, MO 63147

Please make checks (\$35 per entrant) payable to AWWA Golf.

	Handicap	Calloway	System
		Yes	No
Name _____			
Organization _____			
Address _____			
Telephone _____			
Name and address of others in foursome:			
1. _____			
2. _____			
3. _____			

AWWA Racquetters to Battle Over Net in Round Robin Tourney

Those handy with a racquet may try their skills on the court at the Centennial Conference Tennis Tournament on Tuesday, June 9.

From 9 a.m. to 4:30 p.m., the South Hampshire Racquet Club will host AWWA conferees in a round robin tennis tournament. Buses will travel between the club and the Cervantes Convention Center, AWWA's conference headquarters, several times during the day. The cost of \$10 per person includes transportation, court fees, balls, and prizes. Contestants are welcome to use the club's bar and restaurant for refreshment.

The tournament will include sections for men's singles, men's doubles, and women's doubles. Ranking for tournament play is based on the

Lawn Tennis Association (LTA) ranking systems: A, excellent; B, good; and C, fair.

South Hampshire boasts 11 tennis courts, 7 racquet ball courts, and locker room facilities complete with saunas in addition to the bar and restaurant. Individual arrangements can be made to play racquet ball during conference week.

Preregistration is preferred, but late registration will be set up in the convention center on Sunday and Monday, June 7 and 8, as long as there is available space. To preregister, send the complete form with LTA ranking, type of play, and fee to R.C. Matthews, AWWA Tennis Chairman, US Pipe & Foundry, 5750 W. 95th St., Suite 206, Overland Park, Kan. 66207.

AWWA Centennial Conference Tennis Tournament

Mail to: R.C. Matthews
AWWA Tennis Chairman
US Pipe & Foundry
5750 W. 95th St., Suite 206
Overland Park, KS 66207

Please make checks (\$10 per entrant) payable to AWWA Tennis.

Name _____

Address _____

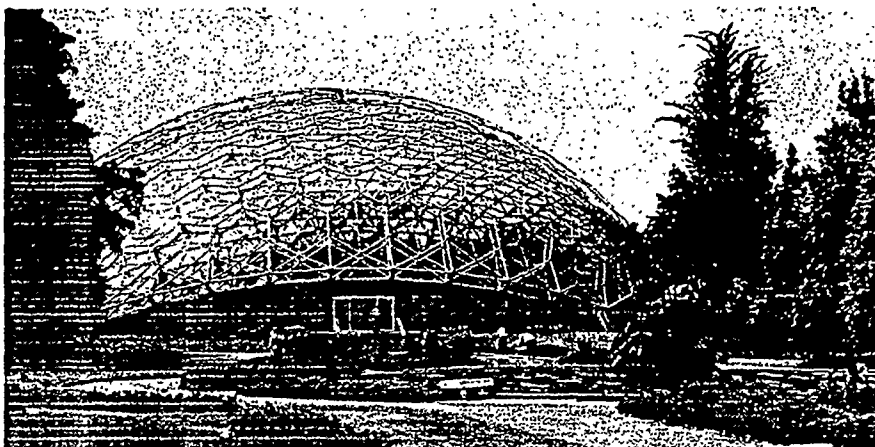
Telephone _____

Organization _____

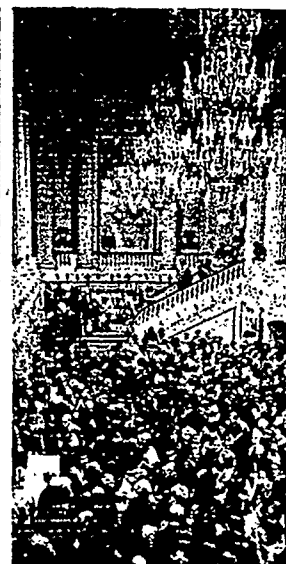
Circle the appropriate designations:

M/S M/D W/D
A—excellent B—good C—fair

Name of doubles partner _____



The world-famous Climatron, above, at the Missouri Botanical Garden houses a jungle of tropical plants. Right: Powell Hall, home of the Saint Louis Symphony, was originally a movie house built in 1926. It was renovated for use as an orchestral hall in the mid-sixties for a mere \$2.5 million.



Exotic Flowers, Symphony Top Ladies' Program

A stroll through the famous geodesic Climatron at the Missouri Botanical Gardens, the strains of the Saint Louis Symphony, and old and new friends at the Ladies' Hospitality Center are only a few of the offerings of this year's dynamic ladies' program at the AWWA annual conference, June 7-11, in St. Louis.

To start off the week, everyone is invited to the opening of the exposition at noon on Sunday, June 7. In the exhibit hall of the Cervantes Convention Center, the traditional "meet and greet" will feature entertainment from German and ragtime bands in a beer garden atmosphere, replete with refreshments, from 12 to 5 p.m. Also at the Cervantes Center, the Convention and Visitors Bureau of Greater St. Louis will show two films on St. Louis. At 2 p.m. the movie will take viewers on a fast-paced armchair tour of St. Louis and its many attractions. The 3 p.m. show will



Clarisse Start

detail the building of a modern marvel—St. Louis Gateway Arch.

Monday morning, spouses are invited to the opening general session to enjoy centennial entertainment, hear the well known keynote speaker, and applaud AWWA's winners at the awards ceremonies.

That afternoon participants will depart for a tour of St. Louis through the historic South Side and the Lafayette Square and Soulard restoration areas, past the large complex of Romanesque and modern buildings of the Anheuser-Busch Brewery. At the Missouri Botanical Garden visitors will see the Climatron with its jungle of tropical plants, the Desert and Mediterranean houses, and the new 10-acre (4-hectare) magnificent Japanese Garden. To complete the introduction to St. Louis, a glass of wine complements a visit to one of St. Louis' fascinating and historic homes.

Another tour of St. Louis on Tuesday highlights new sights—the Riverfront area with the Old Courthouse, the Old Cathedral, the Gateway Arch, and the riverboats; Busch Memorial Stadium; Union Station; and St. Louis University. A visit to the New Cathedral will showcase the largest collection of mosaics in the western world, which cover nearly the entire interior. AWWA sightseers will wind their way through Forest Park, site of the 1904 World's Fair and home of the Art Museum, the Muny Opera, the zoo, McDonnell Planetarium, and Jefferson Memorial and stop to enjoy a glass of refreshing

ice tea. After lunch at one of St. Louis' stylish restaurants, the buses will whisk the group to Powell Hall for a special pops concert by the renowned Saint Louis Symphony. The tour will return to the Sheraton St. Louis in midafternoon—in time to relax before embarking for evening engagements.

On Wednesday, the Ladies' Program will offer participants two exciting speakers. Clarissa Start, St. Louis columnist and author of several books, will lecture on the best buys in antiques today. In her talk, "We Buy Junque, We Sell Antiques," she will share what she has learned as an amateur going into the antique business and what you should not throw away as "junk" but keep as "junque."

The second speaker will discuss "Winning the Aging Game." Gary Couture, nutrition consultant, is associated with the Julian Medical Center in Hollywood, Calif., and the Duvendack Medical Center in Huntington Beach, Calif. He is a frequent lecturer on nutrition and health for professional and civic organizations and author of the popular book *How to Win the Aging Game*.

The ladies' program will repeat a successful innovation from last year's conference—a special technical session on Thursday morning. This year the session will feature three speakers. Muriel Glasgow of the United Nations Children's Fund (UNICEF) will present "Water Means Life," a combination of film and lecture about the role of women in the public health aspects of com-

munity water supply, especially in underdeveloped countries. Jo Ann Dreas of the sex crime section of the St. Louis Metropolitan Police Department will discuss safety on the streets. The third speaker will be Abel Wolman, one of the most respected experts in the water supply industry.

Also on Wednesday and Thursday, several optional tours will be available at an additional charge, for those who wish to ride to the top of the Gateway Arch; cruise on the Mississippi; visit the estate of August Busch, Grant's Farm; journey to St. Charles, Missouri's first capital; tour three of St. Louis' most famous historic homes; or attend a fashion seminar and shop at Plaza Frontenac.

Throughout the week, the Ladies' Hospitality Center will provide a special place for new and old friends to gather for morning coffee, a game of bridge, or relaxed conversation. A special memento of St. Louis will be given out at the hospitality room, located in the St. Louis Sheraton.

Spouses are especially welcome at the closing luncheon, a new feature at the centennial conference. The luncheon will be held Thursday at noon and costs \$10. The annual banquet will be held on Wednesday night this year with the traditional passing of the gavel and ragtime entertainment.

Registration for the ladies' program can be made on the conference registration form or at the registration area in the Cervantes Convention Center at the conference.

Hog Hollow, Howard Bend, Chain of Rocks: Names of Water Plants Recall Mark Twain Era

Those far-away places with strange-sounding names are really water treatment plants for the St. Louis city and county water utilities.

This year the annual conference facility tours will visit Hog Hollow, Howard Bend, and Chain of Rocks water treatment plants, Tuesday and Wednesday, June 9 and 10.

On both mornings, tour A will leave the Cervantes Convention Center at 8:30 a.m. to visit the Hog Hollow and Howard Bend plants, returning about 1:00 p.m. Leaving the center about 1:00 p.m. on Tuesday and Wednesday, tour B will take in the Chain of Rocks Water Treatment Plant, getting back about 5:00 p.m. in time for evening plans. Each tour costs \$15 and includes transportation, tours, and a light repast. Registration for the tours can be made on the technical registration form or at the registration area of the convention center Sunday through Tuesday, June 7-9.

The Hog Hollow Water Treatment Plant is a 180-million gallon per day (680-megalitre per day) facility of the St. Louis County Water Company. The plant treats Missouri River water with clarification, filtration, softening, and chlorination processes. Built in stages between 1930 and 1970, Hog Hollow has the most modern plant configuration in the water company's system. The 1970 addition is a single outdoor sand filter basin with chemical feed from an adjacent building; water is pumped directly from the basin into the distribution system.

The highlight of the Hog Hollow tour is its trace substances laboratory developed in response to the Safe Drinking Water Act and the attendant regulations of the US Environmental Protection Agency. The laboratory uses a Finnigan gas chromatograph-mass spectrometer to analyze water samples for volatile organic pollutants. In addition, the laboratory also monitors for pesticides and heavy metals.

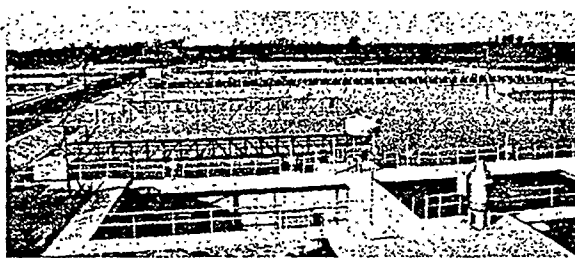
The Howard Bend Water Treatment Plant, owned and operated by the water division of the city of St. Louis, is located outside the city limits. The plant treats Missouri

River water and is rated at 160 mgd (610 ML/d), but with the ability to pump 210 mgd (790 ML/d), from the underground filter basins and the 5-mil gal (20-ML) clearwell storage. Water is pumped to a 100-mil gal (380-ML) storage facility on the city distribution system.

In addition to sand filtration, the plant utilizes liquid chemicals, like ferrous sulfate solution and liquid polymers. The tour will feature the storage area for bulk liquid chemicals.

Tour B will visit the Chain of Rocks Water Treatment Plant, a facility of the city of St. Louis water division located on the Mississippi. The plant has the capacity to treat 388 mgd (1500 ML/d) of surface water drawn from the Missouri River or the Mississippi or both. The plant's intake on the Missouri side of the Mississippi River draws only Missouri River water; the intake on the Illinois side of the Mississippi draws water from "Ol' Man River." The chemical treatment basins are located outside and the sand filters inside. It takes from one to three days for water to travel through the plant. The laboratory at Chain of Rocks tests for pesticides, herbicides, and trace metals.

Top: The Missouri River pours into the mighty Mississippi just above St. Louis. In the mixing chamber, center, coagulants are added to the water to produce flocculation at the newest plant of the St. Louis County Water Co. Bottom: In the company's most modern plant, water is filtered through 22 inches (560 millimetres) of anthracite coal, 8 in. (200 mm) of sand, and 12 in. (300 mm) of graded gravel.



Take a Boat, Take a Plane, Take a Bus—Meet AWWA in St. Louis!

American Airlines has been chosen as the official carrier for AWWA's 1981 centennial conference in St. Louis, June 7-11.

Besides having one of the country's largest route systems, American offers conference attendees the services of its highly sophisticated reservations system.

American's information system can give you anything from flight times to the time and place of the banquet. It all centers on a toll free number—800-433-1790 (in Texas, call 800-792-1160).

This number connects you with a specially trained convention specialist with immediate access to conference-related information, as well as other travel services. And not only will these agents take care of ticketing and schedul-

ing on American, but they will find the least expensive fare available on any airline and confirm a reservation for you.

American can remind attendees of hotel accommodations, make arrangements for shipping meeting-related freight, and answer a host of questions about AWWA's conference events.

Given American's reputation for thoroughness, AWWA conferees should have nothing but smooth sailing—or flying—to St. Louis in June.

Getting from Lambert-St. Louis International Airport to downtown can be managed in an airport limousine for \$5.50 (\$10 roundtrip). A one-way cab ride over the same route runs from \$18 to \$20, plus tip.

Transportation in St. Louis will be no problem for AWWA conferees.

The handy shuttle buses between hotels and Cervantes Convention Center will be provided by AWWA again this year at no cost. Conference attendees can also take advantage of the free transportation provided to all AWWA social events, facility tours, ladies' activities, and the golf and tennis tournaments.

Public transportation around the metropolitan area is the Bi-State Transit system, which charges a basic fare of 50¢ and 10¢ for each transfer. Bi-State's bus service is exceptionally usable; as the more heavily traveled lines operate 24 hours a day, seven days a week. Convenient and economical connections can be made between hotels, downtown, shopping areas, sports facilities, city parks, or meeting halls.

Tours Entice Conferees to Nightlife on the Mississippi

The first three nights of the annual conference, June 7-9, have been left open and—in an effort to allow more flexibility for conferees—AWWA is offering an attractive variety of social events on those nights. These optional tours provide attendees with an opportunity to mix and discuss business or pleasure on a casual basis.

If you would like to do some socializing while sampling what St. Louis has to offer, use the coupon below to make reservations for these tours and mail directly to the St. Louis Scene, Inc., 149 N. Meramec St., St. Louis Mo. 63105. The tour company will also have a reservation desk in the registration area of the Cervantes Convention Center Sunday through Tuesday of the conference.

Goldenrod Showboat—Sunday, June 7, and Tuesday, June 9, 6:15-11:00 p.m.; \$23.25 (cash bar). Enjoy a merry evening of old-style entertainment on board the *Goldenrod*—last authentic showboat on the Mississippi. Sample spirits and tap to ragtime in the memorabilia-filled bar, then move to the captain's dining room upstairs for a sumptuous buffet. Downstairs in the theater, you can escape into laughter watching old-time melodrama and fresh young vaudeville acts, join in an old-fashioned sing-along, or savor the nostalgia of watching favorite movie stars in classic movies of the silent era.

Royal Dumpe Dinner Theater—Sunday June 7, and Monday, June 8, 7:15-11:00 p.m.; \$23.50 (cash bar). Spend a hilarious evening at the Royal Dumpe Theater, a 16th century dinner theater complete with strolling minstrels, serving wenches, and a cast providing raucous, riotous entertainment in a zany atmosphere. Dinner is served during a show that thrives on audience participation.

Join in the Spirit of St. Louis!



Champagne Twilight Tour—Sunday, June 7, 6:00-8:00 p.m.; \$17.00. What could be more pleasant than sipping champagne while seeing the sights of St. Louis? Each bus will be attended by a tour guide, as well as a bartender serving hors d'oeuvres and filling glasses. The tour will wind its way through the historic Riverfront section—past showboats and stern-wheelers. You will see the Old Courthouse, the Old Cathedral, and the mammoth complex of Romanesque and modern buildings that is the Anheuser Busch brewery. Then you cruise through Forest Park—past its Art Museum, Muny Opera, and Zoo—and end up viewing the fascinating archi-

ture of Union Station and St. Louis University.

Baseball Game—Sunday, June 7, and Tuesday June 9; 6:15-11:00 p.m.; \$13.50. Take part in America's favorite pastime at Busch Memorial Stadium with some exciting major league baseball. The St. Louis Cardinals' opponents will be the San Diego Padres on Sunday and the Los Angeles Dodgers on Tuesday.

Moonlight Dinner Cruise—Monday, June 8, and Tuesday June 9, 7:00-11:00 p.m.; \$23.75 (cash bar). Aboard the *Tom Sawyer*, a replica of a 19th century sternwheeler, you can sit back and enjoy cocktails and a buffet dinner as

you watch the banks of the Mississippi glide by. Later, strains of ragtime might rouse you from your thoughts and have you singing and dancing to this timeless American music.

Wild Times Corral—Monday, June 8, 7:00-11:00 p.m.; \$26.00 (cash bar). Don your western garb and get ready to really eat—barbecue ribs, chicken, pork steaks, homemade pie, and more—at the Wild Times Corral overlooking Forest Park. After you have had enough of eating, you can loosen up and have a good time with some down-home country western music, performed by Jay Thomas and the Country Express.



The *Goldenrod* was the basis for Edna Ferber's novel *Showboat*. Built in 1909, it is the last authentic showboat on the Mississippi.

Optional Tour Reservations

Transportation, guides and admissions are included in all tours and activities. Meals are included in 1, 2, 5, 6, 7, 8 and 9. Evening activities depart from Cervantes Convention Center, front entrance. Arrangements will be made to bring you to the convention center and return you to your hotel after the event. Pick up reserved tickets at the tour desk in the registration area at the convention center. Tickets will be sold during registration hours on a space available basis at the tour desk. If less than 40 persons respond to any event, that event will be cancelled and money refunded in full.

Tour	Date	No. Persons	Cost	Total Amount
1—Goldenrod Showboat	June 7		\$23.25	
2—Royal Dumpe Dinner Theater	June 7		23.50	
3—Champagne Twilight Tour	June 7		17.00	
4—Baseball Game	June 7		13.50	
5—Moonlight Dinner Cruise	June 8		23.75	
6—Royal Dumpe Dinner Theater	June 8		23.50	
7—Wild Times Corral	June 8		26.00	
8—Goldenrod Showboat	June 9		23.25	
9—Moonlight Dinner Cruise	June 9		23.75	
10—Baseball Game	June 9		13.50	

Name _____
 Home _____
 Address _____
 Hotel _____

Please enclose check or money order to: The St. Louis Scene, Inc.
 149 N. Meramec St.
 St. Louis MO 63105

EMGM Drive Ends April 1, Nets 7500 New Members

Rich Lane, Manager of Section Services



April 1 officially marked the close of the EMGM "Every Member Get a Member" five-year membership drive campaign. Final figures and statistics will be printed in this column next month since we have to wait for late applications to clear data processing and then prepare a final statistical breakdown. Watch for it. It should be very interesting.

Without question, the EMGM campaign was a great success. Total AWWA membership stood at 25 612 when the campaign began in April 1976, and we anticipate breaking 33 000 to close it out. That would reflect a 29 percent growth rate over five years.

Those figures are commendable and, of course, reflect the hard work that was put into

this campaign by everyone who recruited a new member. And we thank you. A special thanks and three cheers to the section membership committee chairmen and their committee people. They were the troops in this campaign. And when you take a minute to remember they accomplished this feat on 100 percent volunteer effort, it really puts this achievement into perspective.

We're happy and proud... but not through yet. As I've said before, the end of EMGM only gives us a new starting point. That 33 000 figure is our springboard to future growth. It shows we have a good thing going. What say, let's keep it growing.

Recruiting awards, drives, and contests will continue both on the section level and the staff level. Many sections still have membership drives going. Check in with your section membership chairman and see what's going on. I'll have news in this column next month announcing a nice gift you can get for recruiting a new member.

In the meantime, don't let up now. We're getting accustomed to this growth rate and how it has helped the association to do more for all members. Once more with feeling... THANK YOU ALL!

Centennial Club

These AWWA members have recruited at least ten new members during the EMGM campaign to earn admittance to the Centennial Club and a certificate of club membership.



Section	Celebrity
Kentucky-Tennessee	Ronnie Wene
Rocky Mountain	Richard Lane
	Ron Motzner
	Sandra Thies
Southeast Virginia	Ray Green
	Robert Hoehn

members to date: 333

Tie Pinner

These members have recruited at least five new members during the EMGM campaign to earn their AWWA centennial tie pin or necklace charm.



winners to date: 648

Section	Recipient
Hawaii	Ed Lau
	Reginald Young
Indiana	Howard Cundiff
Intermountain	Richard Nelson
New York	Charles Seal
Rocky Mountain	Ken Reedy
	Ron Siebert
Texas	Artis Duty

BOARD CREATES NEW DIVISIONS (continued from page 1)

standards were approved—B302-81, Ammonium Sulfate; C900-81, Polyvinyl Chloride (PVC) Pressure Pipe, 4 in. Through 12 in., for Water; and C606-81, Grooved and Shouldered Type Joints.

The board reaffirmed a policy statement on Government Supported Projects Material and Equipment Selection. (See *Willing Water*, August 1980.)

Several changes to the Bylaws were approved. Eligibility for association office has been restricted to past directors and current directors serving a second or third year on the board, and voting alternates for directors have been provided for. The Board of Directors has been given discretion in conferring life membership in the association, and retiree members may receive the *Journal AWWA* upon payment of an additional dues amount.

One other amendment to the Bylaws has been approved on the first reading, which means at least a month-long notice period is required before the final vote. This amendment, to be voted on in June, would provide for filling vacancies of council or foundation chairmen serving on the board.

The following awards were approved:

Distribution Division Best Paper—R.W. Buelow, J.R. Millette, E.F. McFarren, and J.M. Symons, "The Behavior of Asbestos-Cement Pipe Under Various Water Quality Conditions: A Progress Report."

Management Division Best Paper—A.M. Tinkey, "A Service Center Complex Designed for Today and Tomorrow."

Resources Division Best Paper—D.P. Sheer, "Analyzing the Risk of Drought: The

Ocoquan Experience."

Water Quality Division Best Paper—P.R. Cairo, B.S. Aptowicz, R.G. Lee, and W.M. Blankenship, "Is Your Chlorine Safe to Drink?"

AWWA Publication—J.L. Patton and M.B. Horsley, "Curbing the Distribution Energy Appetite."

Hall of Fame—Hardy Cross and N.T. Veatch.

Outstanding Service—E.F. Johnson.

AWWA Research—J.M. Symons.

Honorary Membership—Glade Anderson, A.E. Becher, Steven Bonk, L.R. Burzell, W.C. Hague, L.J. Hash, P.L. McCarty, C.R. Morris, R.R. Peters, Maarten Schalekamp.

And finally, the board approved the 1981 budget, with an income of \$5 329 800 and expenses of \$5 266 770.

EPA's 2ND SPOT (continued from page 1)

sive experience in the environmental field to the job. He has been a consultant in the fields of environmental health and water pollution. He is also acquainted with the USEPA and the federal standards for drinking water from his three-year tenure, from 1975 to 1977, on the National Drinking Water Advisory Council.

In addition to several positions at New Mexico State University, Hernandez has held the post of research professor at the University of Santiago in Chile and at Bogazici University in Istanbul, Turkey. He has been involved with numerous research studies involving engineering and the environment and is a frequent contributor to professional journals.

He has worked as an engineer for the state of New Mexico in several capacities for the departments of game and fish and public health. While with the state health department, Hernandez was in charge of the programs for water pollution control.

His long involvement in civic affairs earned him New Mexico's distinguished public service award in 1980, and he received a letter of commendation from President Nixon for his exceptional service in the field of water and air pollution.

Hernandez was the New Mexico delegate to the White House Conference on the Aging. At the state and regional levels, he has participated as a member of the Governor's Committee on Economic Development and the Air Quality Technical Advisory Committee.

For AWWA, Hernandez served on the education committee from 1976 to 1978. His other professional affiliations include the American Society of Civil Engineers, the American Public Works Association, and the Harvard Engineering Society. In 1978, the New Mexico division of the National Society of Professional Engineers selected Hernandez as the engineer of the year.

Hernandez, 51, received his bachelor's degree in civil engineering from the University of New Mexico, a master's in sanitary engineering from Purdue University, and from Harvard University a master's in environmental engineering and a doctorate in water resources.

Fight Fire With Common Sense: Pre-Plan Survival

The fatalities and injuries because of recent Las Vegas and New York hotel fires have prompted AWWA's safety department to offer some basic suggestions for coping with such an emergency.

Travel—on business and vacation—is the norm for many Americans, and travel often includes a night or two or even a week at a hotel or motel. Planning for your safety should begin when you check into your hotel. If you plan how to escape from a fire before you are caught in one, you will be less likely to panic and in better shape to survive.

When You Check In

Regardless of whether you will share the accommodations with others, everyone should check out the escape routes, the safety precautions, and the best procedures to follow in an emergency.

First, locate the nearest exit that is not an elevator. Do not use an elevator during a fire; smoke, heat, and fire do funny things to elevator call buttons and controls, and electrical power may fail.

There are several things to note about the nearest exit. Is it to the left or the right as you leave your room? Is the exit on the left or right side of the hallway? Do you have to turn a corner? Is anything in the hallway that could be in your way—an ice machine, maybe? When you open the exit door, what do you see? Stairs? Another exit? Sometimes there are two doors to go through, especially in newer hotels.

As you return to your room, count the doors. Is the exit the sixth or seventh door from your room?

When you return to your room, select a place to always put your room key. Form the habit of putting your key in the same place every time you go to your room. A nightstand is an excellent location. It is close to the bed, so that you can grab your key when you leave without wasting time looking for it.

It is important to close the door of your room when you leave to minimize drafts that draw fire, but you do not want to be locked out of your room. You may find fire and smoke in the hallway or exit route and want to return to your

room. Remember your room key; it will be necessary in hotels with self-locking doors.

After you check your exit and select your key location, you should check out your room. Take a good look at the window. Does it open? Does it have a latch? A lock? Does it slide? Open the window if you can and look outside. What do you see? A sign? Ledges? How high up are you? A good mental picture of what is outside your window may come in handy later. It is important to know how to open your window; it is also important to know how to close it.

Finally, most hotels have instructions on the inside of your room door for the procedures to be taken during an emergency. Read them now. In an emergency, you may not have time to read them.

Fire!

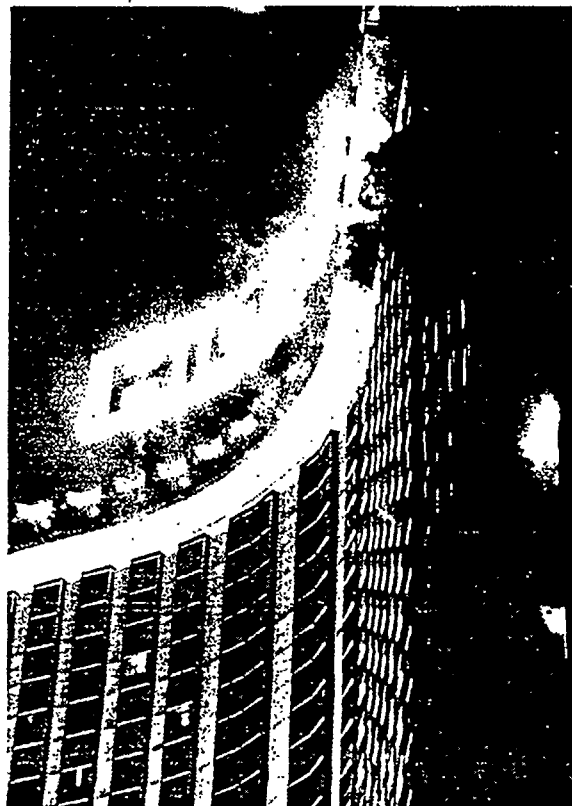
If you awaken to the telephone, someone banging on your door, the smell of smoke, or some other disturbance, investigate before you go back to sleep. A few minutes of investigation could make the difference.

If you wake up to smoke in your room, grab your room key from the nightstand, roll out of bed, and head for the door on your hands and knees. The air closest to the floor is the safest; the air 5 feet (2 metres) above the floor could be laden already with odorless carbon monoxide.

Before you open the door, feel it with the palm of one hand. If the door or the knob is hot, do not open the door. The fire could be just outside. If the door is not hot, then with the palm of your hand still on the door—in case you have to slam it shut against smoke—slowly open the door and peek into the hallway to assess the conditions outside your room.

If the coast is clear, crawl into the hallway. Be sure to close your door behind you to minimize smoke damage and retard the fire.

As you make your way to the exit, on your hands and knees, stay against the wall on the side where the exit is. If you are on the wrong side of the hallway, you might crawl right past the exit. If you are in the middle of the hallway, people who are running might



Knowledge of the proper procedures to follow in a fire can eliminate panic and increase your chances of survival. Recent hotel fires, like the one at the Las Vegas Hilton, have prompted AWWA to publish these safety tips. (Wayne Kodey/Las Vegas Review-Journal)

trip over you. Stay on the same side as the exit, counting doors as you go.

Don't Panic!

When you reach the exit, it is very important that you *walk* down the stairs and hang on to the handrail as you go. Otherwise, panicking people who are running may knock you down, and you might not be able to get up. Just hang on, and stay out of others' way if possible. Exit doors are locked on the stairwell side, so you must walk down to the first floor and leave through a ground floor exit.

Should you wake up and find smoke in your room and the door warm or the hallway filled with smoke, do not panic. Shut the door to the hall, and stay in your room.

If there is smoke in your room, open the window to vent it. If there is no smoke in your room, however, do not open the window; there may be smoke outside.

If your room continues to fill with smoke, defend yourself. If

the telephone works, let someone know you are there. Flip on the bathroom vent if smoke is coming in. Fill the tub with water for fire fighting (but do not get in). Wet some sheets or towels, and stuff the cracks of your door to keep the smoke out. With your ice bucket, bail water from the tub onto the door to keep it cool. Feel the walls; if they are hot, throw water on them too. You can put your mattress up against the door and hold it in place with the dresser; keep it wet.

A wet towel tied across your nose and mouth will help filter out smoke if you fold it in a triangle and put the corner in your mouth.

If there is fire and smoke outside your window, pull down the drapes, and move everything that is combustible away from the window.

Positive, sensible action is better than standing by the window, waving frantically to attract attention. You can give the fire fighters more time to reach you, if you use defensive measures.

(continued on page 15)

Education & Training

A Schedule of Courses for the Water Industry

Information to be included in Education & Training must be received at least two months in advance of the start of the school or the closing date for course registration. Complete details should be sent to the Director of Education, AWWA, or the Editor, *AWWA Mainstream*, 6666 W. Quincy Ave., Denver, CO 80235. The earlier that the material is received, the more often it may be included in Education & Training. Further information about any AWWA course can be obtained from the Training Programs Coordinator at the above address or by telephone, 303-794-7711. Those courses sponsored by AWWA or its sections are marked with the AWWA logo. AWWA's endorsement is given only to courses sponsored by the association and its sections.

ARIZONA

AWWA Water Loss Reduction Seminar, Phoenix, May 22. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

BRITISH COLUMBIA

19th B.C. Water and Waste School, Vancouver, May 11-15. Fee \$75. Contact B.C. Caine, B.C. Ministry of Envir., 1515 Blanchard St., 5th Floor, Victoria, BC V8W 3C8; telephone 604-387-3494.

CALIFORNIA

AWWA California-Nevada Section Seminar on Water Sampling, Fairfield, May 7. Fee: members, \$10; nonmembers, \$15. Contact J. Hoagland, 1228 S. Bundy Dr., Los Angeles, CA 90025; telephone 213-473-1460.

Fundamentals of Groundwater Management, Berkeley, May 6-7. Fee \$320. Contact D.K. Todd, Resource Seminars, 2914 Domingo Ave., Berkeley, CA 94705; telephone 415-841-2091.

AWWA Cost of Service Seminar, Los Angeles, May 11. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

Practical Environmental Law, Palm Springs, May 11-13. Fee \$600. Contact Practical Envir. Law, Seminar Div. Office, 5th Floor, 1120 20th St. N.W., Washington, DC 20036; telephone 202-337-7000.

Conserving California's Coast, Davis, May 15. Contact Univ. Extension, Univ. of California at Davis, Davis, CA 95616; telephone 916-752-0880.

COLORADO

AWWA Water Loss Reduction Seminar, Denver, May 20. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

Statistical Techniques for Data Generation and Forecasting in

Hydrology and Water Resources, Ft. Collins, Jul. 6-10. Fee \$525. Contact J.D. Salas, Engrg. Research Center, Colorado State Univ., Ft. Collins, Colorado 80523; telephone 303-491-8460.

Flood Prediction, Estimations, and Forecasting, Ft. Collins, Jun. 29-Jul. 3. Fee \$540. Contact H.W. Shen, Engrg. Research Center, Colorado State Univ., Ft. Collins, CO 80523; telephone 303-491-8552.

CONNECTICUT

AWWA Water Loss Reduction Seminar, Hartford, May 8. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

AWWA Connecticut Section Seminars: Pollution Abatement, West Haven, Apr. 22. Cross Connection, West Haven, Apr. 29. Fee \$12. Contact Al Rivers, New Haven Water, 90 Sargent Dr., New Haven CT 06511.

GEORGIA

Georgia Water and Waste Water Institute, Carrollton: Basic Groundwater, Apr. 21-24; Water Lab 1 (Chem. & Bact.), May 11-15; Water Lab 2 (Bact. only), May 19-22; Basic Surface Water, May 26-29; Water Lab 1 (Chem. & Bact.), Jun. 8-12; Water Lab 2 (Bact. only), Jun. 16-19. Contact GWWI, West Georgia College, Carrollton, GA 30118; telephone 404-834-1468.

ILLINOIS

AWWA Illinois Section Chemical Feed Seminar, Princeton, May 6. Contact Don Renner, 33 S. Arlington Heights Rd., Arlington Heights, IL 60005; telephone 312-253-2340.

Water Flow Monitoring Workshop, Chicago, Apr. 21. Fee \$175; preregistration required. Contact Carl F. Buettner Workshops, 9501 Pinespray, Box 8656, St. Louis, MO 63126; telephone 314-842-3737.

Southern Illinois Univ. at Edwardsville Training Courses: Treatment Plant Electricity, Quincy, Apr. 27; fee \$23. Pumps and Pumping, Quincy, Apr. 28; fee \$23. Treatment Plant Electricity, Bloomington, Apr. 30; fee \$23. Pumps and Pumping, Bloomington, May 1; fee \$23. Coliform Testing, Grayslake, May 13; fee \$69. Chlorination, DuPage County, Jun. 1; fee \$46. Chlorination, Freeport, Jun. 4; fee \$46. Treatment Plant Administration, Edwardsville, Jul. 23; fee \$46. Contact Envir. Resources Training Center, Campus Box 75, Southern Illinois Univ. at Edwardsville, Edwardsville, IL 62062; telephone 618-692-2030.

IOWA

Water Flow Monitoring Workshop, Des Moines, Apr. 29. Fee \$175; preregistration required. Contact Carl F. Buettner Workshops, 9501 Pinespray, Box 8656, St. Louis, MO 63126; telephone 314-842-3737.

KENTUCKY

AWWA Cross Connection Control Seminar, Bowling Green, Apr. 27. Contact Training Programs

Coordinator, telephone 303-794-7711, ext. 290.

MARYLAND

AWWA Chlorination Seminar, Baltimore, May 11-12. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

MASSACHUSETTS

AWWA Water Loss Reduction Seminar, Boston, May 7. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

AWWA Customer Service Seminar, Waltham, May 11. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

MICHIGAN

AWWA Safety Seminar, Ann Arbor, May 20. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

MINNESOTA

Water Flow Monitoring Workshop, Minneapolis, Apr. 27. Fee \$175; preregistration required. Contact Carl F. Buettner Workshops, 9501 Pinespray, Box 8656, St. Louis, MO 63126; telephone 314-842-3737.

AWWA Water Utility Management Institute, Minneapolis, May 3-8. Fee \$275. Contact J.M. Kroll, 355 Nolte Center, 315 Pillsbury Dr. S.E., Minneapolis, MN 55455; telephone 612-373-3685.

AWWA Customer Service Seminar, Bloomington, May 6. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

MISSOURI

Water & Wastewater Technical School, Neosho: Pump Operation & Maintenance, Apr. 27-May 1; fee \$125. Basic Treatment for Water Plants, May 13-15; fee \$125. Advanced Treatment for Water Plants, May 18-20; fee \$125. Swimming Pool Operation & Maintenance, May 21-22; fee \$100. Math & Safety Seminar for Water Plants, Jun. 11-12; fee \$100. Water Certification Review & Exam—C&D, Jun. 15-19; fee \$175. Contact Short Course Coordinator, Water & Wastewater Technical School, Dwr. 370, Neosho, MO 64850; telephone 417-451-2786, ext. 33.

NEBRASKA

Water Flow Monitoring Workshop, Omaha, May 1. Fee \$175; preregistration required. Contact Carl F. Buettner Workshops, 9501 Pinespray, Box 8656, St. Louis, MO 63126; telephone 314-842-3737.

NEW YORK

Polytechnic Institute of New York Short Courses in Water, Brooklyn: Grade A Including Filtration, Apr. 27-May 8; fee \$350. Contact W.T. Ingram, 7 North Dr., Whitestone, NY 11357.

OHIO

Water Resources Systems Short

Course, Cleveland, May 18-22. Fee \$380. Contact M.A. Pelot, Crawford Bldg., Rm. 612C, Case Western Reserve Univ., Cleveland, OH 44106; telephone 216-368-4492.

ONTARIO

AWWA Ontario Workshop: Everything an Operator Would Want to Know About Computers...but was afraid to ask, Toronto, May 21. Fee \$20. Contact Doris Windsor, Ontario Section, No. 45 23rd St., Toronto, ON M8V 3M6; phone 416-252-7060.

PENNSYLVANIA

AWWA Water Loss Reduction Seminar: Philadelphia, May 4; Pittsburgh, May 6. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

AWWA Chlorination Seminar, Harrisburg, Jun. 1-2. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

SOUTH CAROLINA

AWWA Safety Seminar, Greenville, May 5. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

TEXAS

AWWA Water Loss Reduction Seminar: San Antonio, May 18. Contact Training Programs Coordinator, telephone 303-794-7711, ext. 290.

UTAH

AWWA Intermountain Seminars: Safety: Logan, Apr. 22. Operator Certification: Orem, May 2. Cross Connection Control for Cities, Engineers, and Architects, Richfield, Jun. 17. Contact Larry Scanlan, Bureau of Public Water Supplies, Box 2500, Salt Lake City, UT 84110; telephone 801-533-4207.

NARUC Regulation of Water Utilities Seminar, Salt Lake City, May 17-22. Fee \$225. Contact Claire Turner, Div. of Continuing Education, 1152 Annex Bldg., Univ. of Utah, Salt Lake City, Utah 84112; telephone 801-581-5809.

WASHINGTON

Using Lab Data to Control Water & Wastewater Process: Lynnwood, May 12-14. Wentachee, May 19-21. Contact Washington Envir. Training Resource Center, 12401 S.E. 320th St., Auburn, WA 98002; telephone 206-833-9111.

Fundamentals of Groundwater Management, Seattle, Jun. 24-25. Fee \$320. Contact D.K. Todd, Resource Seminars, 2914 Domingo Ave., Berkeley, CA 94705; telephone 415-841-2091.

WISCONSIN

Water Flow Monitoring Workshop, Madison, Apr. 23. Fee \$175; preregistration required. Contact Carl F. Buettner Workshops, 9501 Pinespray, Box 8656, St. Louis, MO 63126; telephone 314-842-3737.

(continued on page 15)

GAO Endorses Basin Commissions

A recent General Accounting Office report concludes that the Susquehanna and Delaware river basin commissions are worthwhile and achieve results. An example is management of basin-wide droughts through joint cooperation and action. While the report indicates that progress has been slow in some areas, it also notes that the commissions have been dealing with complex and politically sensitive issues.

EDUCATION & TRAINING (continued from page 14)

WYOMING

Basic Science Seminar for Water Utility Personnel: Gillette, Apr. 30; Jackson, Jun. 1; Powell, Jun. 4. Fee \$10. Contact Robert Champlin, Dept. of Civil & Architectural Engrg., Univ. of Wyoming, Box 3295, Univ. Sta., Laramie, WY 82071.

Groundwater & Wells: Gillette, May 1; Jackson, Jun. 2; Powell, Jun. 5. Fee \$10. Contact Robert Champlin, Dept. of Civil & Architectural Engrg., Univ. of Wyoming, Box 3295, Univ. Sta., Laramie, WY 82071.

10th Annual Rocky Mountain Groundwater Conference, Laramie, Apr. 30-May 2. Fee \$30. Contact Conferences & Institutes, Box 3274, Univ. Sta., Laramie, WY 82071.

AWWA Seminar Calendar

CHLORINATION

Baltimore, Md.—May 11-12
Harrisburg, Pa.—Jun. 1-2

COST OF SERVICE

Los Angeles, Calif.—May 11

CUSTOMER SERVICE

Bloomington, Minn.—May 6
Waltham, Mass.—May 11

CROSS CONNECTION CONTROL

Bowling Green, Ky.—Apr. 27

SAFETY

Greenville, S.C.—May 5
Ann Arbor, Mich.—May 20

WATER LOSS REDUCTION

Philadelphia, Pa.—May 4
Pittsburgh, Pa.—May 6
Boston, Mass.—May 7
Hartford, Conn.—May 8
San Antonio, Texas—May 18
Denver, Colo.—May 20
Phoenix, Ariz.—May 22

WATER UTILITY MANAGEMENT INSTITUTE

Minneapolis, Minn.—May 3-8

Employment Information

The listings carried in this column are published free of charge and once only. Please include all relevant information when requesting a listing. Within reason, there is no word limit. AWWA reserves the right to refuse any request for a listing judged not to be sufficiently pertinent to the water supply field and reserves the right to edit all submissions. Listings are not accepted by telephone and are not written by the association. Although every attempt is made to place ads as soon as possible, there can be no guarantee that a listing will appear in a specific issue. A blind box number will be used for any position-available advertiser who requests one; blind box numbers will be used automatically for all positions wanted unless otherwise requested. In such cases, AWWA acts only as a clearinghouse, forwarding all replies unopened to the advertiser. In reply to any blind listing, write to AWWA in care of the code number appearing at the end of the listing. Make sure this code appears on the envelope. Address all correspondence to AWWA Employment Service, 6666 W. Quincy Ave., Denver, CO 80235.

Positions Available

CHIEF OPERATOR for 4-mgd filter plant in investor-owned utility. Responsibility includes all aspects of production department. Must have or be able to obtain Pennsylvania class B type 1 operator's license within 6 months. Send resume to W.J. Schaeffer, Clearview Water Supply Co., 1705 R. Freeport Rd., Natrona Heights, PA 15065.

WATER-WASTEWATER ENGINEER with ability to perform design and management work for water and wastewater projects. BS in civil or sanitary engineering and 3 years' progressively responsible experience required. PE registration in Louisiana preferred. Send resume and references to R.J. Tuttle, Asst. Dir.—Engrg., Box 30065, City of Shreveport, Shreveport, LA 71153.

WATER SUPERINTENDENT with minimum of 8 years' experience in utility operations and 2 years' supervisory experience to supervise activities of distribution system. Contact Civil Service Comm., City of West Allis, 7525 W. Greenfield Ave., West Allis, WI 53214.

ASSISTANT SUPERINTENDENT for investor-owned company serving community of 18 000. Business and engineering education or experience, good communication skills required. Training directed toward position of superintendent within 2 years. Send resume to Plainville Water Co., Box 248, Plainville, CT 06062.

SENIOR ENGINEER responsible for supervision of engineering staff for planning, design, construction, and maintenance of water and sewer facilities. Applicant must be a registered civil engineer in California. BS in civil engineering is preferred. Submit application as soon as possible to Personnel Officer, El Dorado Irrigation Dist., Box 1608, Placerville, CA 95667; telephone 916-622-4513.

WASTE MANAGEMENT ENGINEER with strong technical background. Minimum 5 years' experience required in liquid-solid wastes management, industrial pretreatment, monitoring, toxic waste, resources recovery. Advanced degree in chemistry, chemical engineering, or environmental engineering desirable. PE not required. EOE. Send detailed resume to Resource Applications, Inc., 226 Maple Ave. W., Suite 401, Vienna, VA 22180.

ASSISTANT WATER SUPERINTENDENT with degree or college level courses in water treatment. Experience in water system supervision and possession of Pennsylvania class A operator's certification required. System includes 12-mgd filtration plant and 60 miles of distribution mains. Send resume to R.V. Kiser, Dir. of Public Services, City of Easton, 650 Ferry St., Easton, PA 18042.

PUBLIC WORKS SUPERINTENDENT reports to director of public works. Responsible for water distribution and sewerage collection, storm drains, equipment pool. Requires 3 years' experience in supervising public works operations with additional experience in planning, scheduling, and budgeting. EOE. Send resumes by Apr. 30 to Personnel Office, City of Forest Grove, 1924 Council St., Box 326, Forest Grove, OR 97116; telephone 503-357-7151.

WATER EMERGENCY SERVICE INVESTIGATOR requires 3 years' experience in construction, repair, maintenance, or operation of water systems and related equipment. Independent judgement and ability to deal with the public desired. Must be willing to work rotating shift. Send resume to Long Beach Civil Service, 333 W. Ocean Blvd., Long Beach, CA 90802; telephone 213-590-6201.

LEVEL 3 OPERATOR for water and wastewater treatment facilities. Send resume to K.P. Cowell, Star Route, Box 362-A, Jackson Hole, WY 83001; telephone 307-733-5740.

PUBLIC WORKS SUPERINTENDENT responsible for the operation and maintenance of water, sewer, electric, and storm drainage systems; public streets including lighting and signs; and maintenance of equipment, improvements, and property associated with public works. Career

position in town of 5000; reports to administrator. Minimum of 5 years' experience, with some in supervisory positions. Must be capable of obtaining certification for class 2 water system. Send resumes including professional references immediately to Town of Steilacoom, 1715 Lafayette St., Steilacoom, WA 98388.

Positions Wanted

WATER METER REPAIR SUPERVISOR with more than 13 years' experience. Possesses Wisconsin certification in cross-connection and backflow prevention. Seeks utility position in southwestern United States. Resume furnished upon request. 4/PW/1

WATER TREATMENT PLANT OPERATOR TRAINEE position wanted for mechanically inclined college graduate. Natural science minor included coursework in ecology, biology, chemistry, and physics. 4/PW/2

WATER PLANT SUPERINTENDENT/CHIEF WASTEWATER PLANT OPERATOR seeks position with responsibility and challenge. Georgia Class 1 certification in surface water, groundwater, and wastewater treatment. 11 years' experience, 9 years as supervisor. Resume furnished upon request. 4/PW/3

WATER QUALITY SPECIALIST with BS degree. Technical training includes water and wastewater treatment, experience in an activated sludge, ozone disinfection wastewater treatment facility. Eager to take on position of responsibility and challenge leading to management. References furnished upon request. 4/PW/4

UTILITIES SYSTEMS SUPERVISOR responsible for sewer maintenance, water distribution, installation of mains, and budget submissions for city of 35 000. 5 years' experience in utilities supervision, 30 years' experience in construction design. 4/PW/6

PUBLIC HEALTH SPECIALIST with 5 years' experience in water supply. Associate science degree in public health technology; coursework included hydraulics, microbiology, chemistry, physics, water supply, treatment plant operations, liquid wastes and waste treatment. Resume furnished upon request. 4/PW/7

PRE-PLAN SURVIVAL (continued from page 13)

Don't Jump!

Finally it is important to make some observations about jumping. Many people who jump are killed or injured by the fall.

If you are on the first floor, you might as well open a window and climb out. From the second floor, you could probably make it with only a sprained ankle, but you must jump out far enough to clear the building. Many people who hang from window sills and then drop hit the sills and

ledges on the way down and go into cartwheels. If they do not kill themselves, they are often seriously injured. If you are any higher than the third floor, chances are good that you would not survive the fall. You would be better off fighting the fire.

The National Safety Council has available a brochure covering basic fire safety procedures in more detail. Interested readers should contact the National Safety Council, 444 N. Michigan Ave., Chicago, Ill. 60611.

Fire Dangers, Not Diseases, Prompted Water Construction in 19th Century

Century-old reports of water boards describe their encounters with many of the same problems as modern-day water suppliers. Efforts to improve water supply were often spasmodic, and conservative funding produced systems that were overburdened almost as soon as they were completed.

One distinct difference between then and now is that a



AWWA Centennial

hundred years ago fire protection led the list of benefits of a public water system. In fact, many old systems were started for the sole purpose of improving fire protection.

The Report of the Water Committee of Dover, Del., recorded on Mar. 1, 1883, described the initiation of a municipal water system.

This first report began with a brief history of the town's efforts to relieve the "sense of perfect helplessness" caused by frequent "destructive conflagrations."

Fire-fighting equipment consisted of an old hook and ladder truck—including buckets—and a small hand engine and short length of hose. The engine pumped a chemical solution "of great extinguishing power," but the stream was small. Water was furnished to the tank by buckets.

According to the report, several serious fires had occurred in Dover, and "a feverish apprehension" arose that a disastrous fire someday might destroy the town.

Fire Heats Waterworks Issue

The report mentions public health as a secondary reason for improving water supply. "The revelations of sanitary science led us to entertain doubt of the purity of our wells."

Modern improvements were cited as the prime cause for well-water pollution. Every house had to be equipped with a "slop sink" in the kitchen, in addition to a bath room and water closet, supplied by a tank or rain water on the roof. This necessitated cesspools, which honey-combed the soil, contaminating the wells.

Hence, the board reached its conclusion, "The finer the house, the worse for the town."

This was the public state of mind when a fire destroyed the Capital Hotel. The fire broke out on a bitterly cold morning in 1881. People panicked, fearing the fire would spread to adjacent buildings. Wilmington, 50 miles (80 kilometres) away, was telegraphed to send two steamers and several hose carts. They arrived "promptly" by train a little more than an hour later.

The report relates that "By stretching their hose from one steamer to the other, they were enabled to draw water from the branch below the town and play upon the burning ruins, thus giving an exhibition to our citizens of what could have been done if we had possessed proper appliances."

The hotel fire was the last straw.

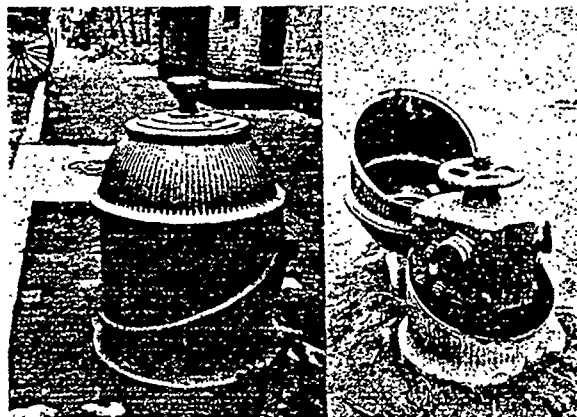
Citizens and legislators finally were convinced "to do something worthy of themselves, to obtain a supply of water for fire protection and domestic use."

Townpeople "Do It Themselves"

The new water system was a do-it-yourself effort on the part of the citizens of Dover. The town council appointed a special committee who "corresponded with various places" for information on waterworks. When the committee members felt they had enough information, they called a town meeting.

Two plans were proposed by the committee: the Holly system, which pumped directly into the mains, and the plan of the Gloucester Company, consisting of a 100-foot (30-metre) standpipe with bypass connections for direct pumping into the mains in case of fire.

The standpipe system was accepted for reasons of convenience and economy. The standpipe would hold 125 000 gallons (473 × 10³ litres) of water—a sufficient quantity for normal use during the night, allowing the engineer to bank the fire for the steam pump and go home. In case of fire, the engineer could return and be pumping directly into the main within 20 minutes. While the town council was



Fighting fires in the tall buildings of the 1870s and 1880s meant using equipment like the steam pumper and hand-drawn hose cart, pictured in top photo. Bottom photo: Fire hydrants have not always looked as they do now. This precursor to the modern version boasted a flip-top design to protect the hose connections underneath.

preparing a bill to present to the state legislature, opposition to the proposed \$35 000 expenditure was growing. At the reading of the bill, the opposition voted the plan down and appointed a third committee to find some other plan.

That committee came back with a recommendation to dig wells or large cisterns and purchase a steam engine. The plan was weakly supported, and the whole issue was reshaped. A compromise was reached when both sides agreed upon a budget of \$20 000 instead of \$35 000.

In March 1882, the town attempted to issue bonds for the system, but a group opposed to the expenditure tried to defeat the issue in the council room. In deference to this small group, the sale of bonds was postponed until a contract for the work could be drawn up. When the town sold the bonds a year later, the money market had changed; the town lost \$1000.

Security at Last

Construction finally started in mid-1882 with the boring of an experimental well at a cost of \$8.40. Economy still came first, and boring was stopped at 21 ft (6.4 m) even though the excavators felt it would have been better to dig 4 or 5 ft (1 or 2 m) deeper.

Pipe-laying began in December 1881, and the last section was put down in September of 1882.

The big test came on Sept. 25, 1882. The pumps were to throw fire streams over the tallest building in town—the Court House. High winds cut off the tops of the streams, and the leather play pipes occasionally were blown from their hose connections. In spite of these interferences, the test "gave ample testimony of the power of the pumps to throw several streams over the highest building in town, and after it was all over, the well was only lowered 6 ft (2 m). . . ."