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**Investigation into the Methods Used by Wisconsin's Water Utilities  
In Allocating Public Fire Protection (PFP) Costs**  
Docket 5-WI-104

Comments on PSC Staff's September 23, 2015, Draft Report  
by David Sheard, P.E., Senior Rate Analyst, Ruekert & Mielke, Inc.  
(former PSC Staff member 1977-2011)  
October 14, 2015

I commend the Commission staff members for the effort put forth in reviewing and documenting past Public Service Commission (PSC) practice and policy concerning PFP rate setting in Wisconsin. I particularly appreciate the work to compile the current practices of all 50 states as it relates to this topic and for being open to reevaluate and propose change where it may be needed.

Having been a long-time PSC employee and serving many years as the Assistant Administrator overseeing the water rate setting process; and teaching Cost of Service and Rate Design principles for several decades at the National Association of Regulatory Utility Commissioners' (NARUC) water rate schools, I put forward the following thoughts for PSC staff to consider in further clarifying past practice and to provide additional perspective on how future water rate design as relates to PFP could be improved.

AWWA-Base Extra-Capacity cost of service (COS) as historically applied by PSC (Dave's perspective)

- The PSC began using the AWWA-Base Extra-Capacity COS in the 1970's, first with the Milwaukee Water Works and then applied to all of the nearly 600 water utilities in Wisconsin. Prior to that time other methods of cost allocation were used. It is important to acknowledge the Agency's long history of seeking to provide a fair allocation of the costs of service among different classes of users, e.g., see attached paper of Commissioner Robert A. Nixon (Page 13, paragraph 6 on rates) presented at April 24, 1940 AWWA Annual Convention.
- The principal reason for a cost of service study is the fact that the water system provides service to a number of different classes of customers who have different water use patterns and demands, and thus different conditions of service. In the AWWA-Base Extra-Capacity COS customers with similar demand and consumption characteristics are grouped into "customer classes".
- The AWWA-Base Extra-Capacity COS procedure recognizes the diversity of demand within the class, rather than a simultaneous demand of all the customers. Similarly by using the "non-coincidental" peak demands for the various customer

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classes including PFP, the allocation procedure recognizes that the peak demand for any specific class may not occur simultaneously with the peak demands of the other system classes. This diversity results in savings in the design, build and operation of the water system.

- In the AWWA-Base Extra-Capacity COS, the “extra-demand” costs (those costs incurred in supplying water above the base or average level) such as to meet maximum day or maximum hour demands are identified and allocated to the Cost Functions using the System Demand ratios principally as PSC staff has discussed in its draft PFP report.
- The fire flows considered in calculating both the System Demand Ratios and the Extra-Capacity Customer Demand Ratios were historically based on studies done by the National Board of Fire Underwriters (NBFU), the predecessor organization to the Insurance Services Office (ISO). NBFU’s fire flow grading schedule was based primarily on population and formed the basis for the municipal fire flows used in PSC water rate cases in the 1970’s. Shortly after the ISO was formed in 1971, it revised the method of identifying fire risk and associated fire flow for insurance purposes thus the PSC no longer had access to a specific “community” fire flow rate as it had in the past under NBFU ratings. Because of this change, the PSC staff began prescribing fire flows in rate cases consistent with the now defunct NBFU grading schedule and over time has adjusted them as needed to maintain consistency among WI water utilities.
- The AWWA-Base Extra-Capacity COS assigns cost for demand-related plant and operations on the basis of the “relative” demands of all the classes including PFP as a class. Seemingly this is a fair and equitable approach. The beauty of the method is that in the “functionalization” process employing the System Demand Ratios, plant and expenses related to demand are identified and catalogued (isolated). The assignment to customer class is then carried out on the isolated demand costs using the representative demand factors for each class. Therefore only the appropriate elements of plant and expenses are assigned on the basis of relative class demand.
- Under the AWWA-Base Extra-Capacity COS, cost savings associated with the diversity of use within a class is shared by all customers of that class. Cost savings associated with the diversity of use among the classes are shared by all classes. For example, the peak flow requirement for residential use rarely occurs at the same time as the peak flow for the commercial, industrial, public authority or PFP classes. The extra-capacity demand required by each class is assessed proportionately (relative to the others.) If a class of customers peaks simultaneously with the system, it is neither penalized nor benefited.

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### Different Perspective on Impacts of AWWA-Base Extra-Capacity COS on PFP Charges

- I question the PSC staff conclusion that because water sales reductions and conservation has resulted in lower volume sales which in turn may increase the cost of service allocated to PFP, that such implies that the PSC's "cost-of-service model assumes that the extra capacity not required to meet the demand of the general service customers is needed to fight fires." (PSC Draft Report page 5 paragraph 2). Related to this on page 12 of the PFP report is the statement that a reduction in water use results in a water system that is "overdesigned" with the "stranded" costs being allocated in part to PFP.
  - I view this impact of the changing world and decreasing water use as simply a rebalancing of who pays the "base" and "extra-capacity" costs of operating a water system for a given test year. For example, if only residential sales plummets by 10% all other general services classes in addition to PFP would pick up this change. In particular the industrial class and, if applicable, a wholesale customer could see measurable rate increases within the general service category ... all else being equal.
  - The exquisiteness of the AWWA-Base Extra-Capacity COS is that it allocates "base" but most notably the "demand" costs to all benefitting customers pursuant to their relative share of base and demand as being forecast for the future test year. Yes it is a "water-bed" of impact in that what goes down "here" must be made up "there" but I would argue that this is handled reasonably well by this COS as applied by the PSC.
    - Arguably PFP charges should not increase if residential sales decrease but perhaps neither should industrial or wholesale charges. Similar kinds of arguments can be raised for the installation of new equipment to improve water quality which directly benefits water destined for consumption but which may have little or no direct benefit to industrial cooling water, or PFP capacity. In practice this level of detail may most appropriately be considered within the PSC's overarching application of the "averaging" principle in setting utility rates. No method is perfect and balance needs to be maintained between practice (administrative ease of application) and outcome (level of detailed accuracy in the result).

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### PSC Staff Recommendations in the PFP Report

1. Use Class Absorption Method on Large Class AB Water Utilities where maximum hour demand controls calculation of the System Demand ratios.

**Comment:** If providing PFP is a real cost in constructing and operating a water system, and I think it is...and certainly decades of PSC practice in cost allocation would seem to validate this, then I would argue that just rolling the cost in with general service rates and letting the pieces fall where they may is not good regulation. Simply because general service maximum hour costs may control water system design in a handful of the States' largest water utilities does not support eliminating the PFP class of service or suggest that these large systems do not incur costs to provide PFP service. However, I would note that my position that PFP costs always be identified is dependent on having a fair mechanism upon which to then design rates to equitably recover these costs.

The recovery of PFP costs has changed for many WI utilities since the 1988 legislation allowing for direct charges to the user customer base. As I have advocated in the past, I do not believe meter or water lateral size is an effective or fair recovery mechanism for PFP. In effect by allowing water utilities to use meter or lateral equivalents to recover their PFP cost, we have essentially rolled these costs into general service rates. The Equivalent Meter and Equivalent Service Methods were made available by the PSC when despite opposition from the PSC, the law was changed in 1988 allowing PFP to be removed from the tax roll at the discretion of the local unit of municipal government. Pursuant to the law change, the PSC was confronted with developing new means to direct charge the PFP cost from water utility customers for those municipalities changing to direct PFP charge recovery. There had to be a quick means adopted for this to be readily implemented. Because the only billing variables most water utilities had access to in 1988 was 1) the measured volume of water used by the customer for some metered period of time (typically quarterly), or 2) the size of the meter or lateral serving the customer, the Equivalent Meter and Equivalent Service Methods of PFP rate recovery were adopted as administratively workable options ... but not necessarily the fairest means of recovering these costs. I would suggest that now is the time to revisit that outcome and consider improvement in PFP rate design.

Often considerable effort is made to identify the cost of providing public fire protection on a given system only in the end to charge these costs back to customers based on what amounts to a parallel of how many "oak trees" they have in their respective terraces. We might even have used oak trees in 1988 if we had ready access to that information and could tie it in with the water utility data base for easy

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billing. Okay, I agree equivalent meters and services are better methods than oak trees...but not by much! In my opinion, we need an improved means to recover PFP costs from benefitting customers, not simply the elimination of these expenses as consideration in the COS...and then rolling them into general service rates.

Not everyone will agree on the PFP issues. Notably I ran the PSC staff PFP report past two of the State's largest water utility managers. A quick summation of their responses was that the current method is far too complicated and costly to the utilities involved in contested rate cases, particularly for wholesale service. Using the equivalent meter method to recover the PFP cost as compared to the PSC staff suggested Class Absorption Method, one of the utilities demonstrated that there was very little difference in rate results. Thus he prefers a simpler method like the Class Absorption Method. Regardless of the policy outcome, these two managers desire clarity in the guidelines and rate case process to result in far fewer protracted rate cases that end up requiring costly litigation under contested case procedures. (I think this concern with complexity and the cost to process rate cases before the PSC is not limited to PFP rates but spills over into the entire water rate case process but likely outside the scope of this current undertaking.)

2. Use of Option #3 to allocate only the hydrant costs, the distribution revenue account and the distribution main account to the PSC "PFP cost function" and thus the PSC "PFP customer class".

**Comment:** Given my favorable view of the PSC practice in applying the AWWA-Base Extra-Capacity COS as discussed above, I would not isolate fire protection from the full impact of the allocation of extra-capacity demand but would acknowledge that as class usage and/or demand factors change, it will have a rebalancing consequence on all other classes including PFP, and in my opinion it should. I could support a revised assignment of PFP flow rates based on some philosophical or program change but question whether the ISO rating schedule as suggested is reasonable as it was not found acceptable back in 1971, and following. Its purpose as developed by ISO is for rating individual buildings for fire insurance risk and cost. Per PSC staff testing results use of ISO fire flows would result in significant swings in PFP charges. Most large systems would experience a decrease while the tiniest of systems would see large increases. That outcome alone brings into question the use of ISO fire flows for this purpose. If somehow justified the use of the ISO fire flows would require the Commission to manage the potential impacts of increased PFP cost to any specific system with a mitigation strategy over a period of years and rate cases. I suspect this would lead to more contested cases before the PSC, not fewer. Thus this outcome could be in direct contrast to an important goal

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of revisiting PFP rate setting to not only refresh technique but to also reduce rate case contestability.

3. Use of ISO method to compute utility's fire flow.

**Comment:** As I note in my comments in 2. above, it remains important to identify the cost of providing PFP based on fire flow criteria that would provide consistency with the historical PFP flows identified under NBFU, and that could provide readily acceptable transition to a new flow standard for all sized water systems. In particular, it will be important for those smaller systems to have a means of implementation that could, if warranted, ameliorate any adverse impacts to ensure rate continuity over some reasonable period of time. Gradualism in rate design should be practiced.

4. Milwaukee Water Works PFP investigation.

**Comment:** It is unclear to me how the current generic study will impact Milwaukee Water Works PFP. Presumably any changes in statewide policy or practice would also have to be consistently applied within the Milwaukee Water Works rate case.

5. Eliminate private fire protection charges.

**Comment:** Obviously if the PSC elects to consolidate PFP and general service costs, it will be necessary to eliminate private fire-protection rates. I would agree that under the 1988 law allowing direct charges it is arguably redundant (or at least appears so) to be direct charging PFP and then also applying a private fire protection fee. As fire chiefs across the state are quick to point out, a private-fire protection customer and especially those installing a sprinkler system, lessens fire-risk across the entire municipality...even if that is motivated or required by code, insurance or other individual business risk realities. This is a good thing and arguments can be made that installing private-fire suppression systems should be incentivized, not deterred. Perhaps in these situations, and because it does not generate a lot of revenue for most utilities, private fire protection charges should be set aside for those municipalities electing to direct charge. However, for those water systems that still place PFP on the tax roll, the PSC could consider continuing the past practice of making private fire protection discretionary for the utility. Property Valuation is one of the best means of fairly recovering the cost of PFP. In my opinion, an option to retain private fire protection charges could provide a small incentive to those electing to continue recovery of PFP on the tax roll in this brave new world.

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Item for additional consideration: Wholesale PFP rates

My last comment deals with wholesale PFP charges which the PSC staff did mention but did not address in detail, and for which it did not include any specific recommendations. Perhaps the thought is to deal with the wholesale PFP issues in the Milwaukee Water Works case proceeding to follow. Nonetheless I want to take this opportunity to recognize the Commission's Oak Creek Criteria as discussed on page 48 of the report as very helpful when considering whether a wholesale customer should be allocated a portion of the wholesaling system's cost of providing PFP. Obviously this criteria will only be useful in situations where the cost of PFP is retained in the COS model, and for which rates need to be developed. I support that outcome for all water systems. For wholesale utilities, relative to these criteria, I suggest the Agency has defined and consistently applied a useful regulatory tool. I encourage the Agency to sustain these criteria as it revisits the allocation of PFP within the Milwaukee Water Works water rate case.

Again thank you for your considerable effort in this yeoman task, and for this opportunity to comment. Please contact me with any concerns, or items you desire additional clarification on as to my perspective. If you would like to regroup with the outside advisory team to discuss the draft report and the comments that you receive, I would be happy to participate in such a discussion. At some juncture I would also like to see this draft policy document sent out for comment to a broader audience of water utility managers and other interested parties within the State.

DAS:crp

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THE PUBLIC SERVICE COMMISSION'S PART IN  
WATER PLANT MANAGEMENT

by

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ANNUAL CONVENTION

of the

AMERICAN WATER WORKS ASSOCIATION

Kansas City, Missouri  
April 24, 1940

The work of the Wisconsin Public Service Commission touches practically all phases of water plant management. Hence, to portray the part played by the Commission in this field requires a review of most phases of management. A few general summaries may indicate managerial activities which are affected by Commission work:

1. Management organizations -- The Commission has helped to establish more efficient management organizations.
2. Financing -- Although it has no direct supervision over the financing of municipal water utilities, the Commission has given invaluable aid in this field through its findings of feasibility; its authorizations for new plants, additions, or extensions; and its approval and development of plant plans.
3. Accounting -- The Commission has enabled those responsible for water plant management to obtain more accurate and useful data essential for successful operation by its accounting regulations and its auditing suggestions.
4. Legal advice -- Upon request, the Commission has often furnished legal advice and assistance to municipal authorities, water plant officials, and attorneys.
5. Service and efficiency -- By its supervision, the Commission has helped to standardize service and to make operations more efficient.
6. Rates -- Commission regulation of rates has largely eliminated discrimination in service charges.

7. Complaints -- Serving as a buffer or arbiter, the Commission has assisted in resolving many local political controversies and in settling many complaints affecting municipal water plants.

The distinctive feature of the public utilities law of Wisconsin is that it gives the Public Service Commission supervision over all municipal utilities, including water plants.<sup>1/</sup> The wisdom of this policy is now seldom questioned.

There are 323 water utilities in Wisconsin with about a dozen small plants under construction. Of the plants operating or being constructed, only 17 remained under private ownership on December 1, 1939.

Because nearly 95 per cent of the water utilities in Wisconsin are municipally owned, the Public Service Commission's part in water plant management deals primarily with the management of municipally owned undertakings.

#### 1. Management Organization

During the early years of state regulation the management of municipally owned water utilities was found to be rather inefficient. Water utilities were sometimes administered by superintendents, at other times by city engineers, and in still other cases by boards of public works, commissions, or committees composed of members of common councils. Frequently it was difficult to ascertain just what the responsibilities of these various officers were and where their duties began or ended.

A striking illustration is afforded by the situation which existed until recently in one of the larger cities of the state. Theoretically the management of this water plant was in charge of a board of public works composed of the city engineer, the city attorney, and the city comptroller. Actually the city council passed upon all bills, a clerk in the board of public works office kept the books, the chief engineer of the pumping station supervised that phase of plant operation, and another employee of the board of public works supervised the operation and maintenance of the distribution plant and sewer system. These diverse responsibilities arose under the provisions of a so-called charter or home-rule ordinance. The Commission strongly urged the board of public works to take active charge of the details of operation, to appoint a general water plant superintendent, to legalize the accounting for these various activities in accordance with the Commission's uniform system of accounts, and to centralize the responsibilities therefor in the city comptroller. Most of these changes are now being made and marked improvement in the records for the guidance of the management is apparent.

Municipal water utilities in Wisconsin are managed by independent non-partisan commissions appointed by the common councils in cities of the first and second class. In cities of the third or fourth class these utilities may be managed either by a board of public works or by a non-partisan commission.<sup>2/</sup> The Public Service Commission has repeatedly advocated

management by independent non-partisan commissions. And it has been shown that water plants so managed are generally more successful when members of the commissions have staggered terms of office and serve for longer periods. Management is less likely to be efficient if it is in the hands of the common council or if terms of office of members of non-partisan commissions and boards of public works expire at the same time. Experience and continuity of executive ability of the local water commission is necessary to successfully conduct a municipal water utility.

It has also been shown that almost without exception those responsible for the management of smaller municipally owned water utilities do not make provisions for expert advice to guide employees who are in direct charge of plant operation. In the few instances where management does employ outside expert advice, the professional service is of a non-continuous character. There is, of course, certain professional service that the state Commission should not attempt to furnish to such utilities. However, it must maintain a technical staff for effective rate and service regulation and it is highly desirable to provide municipal water utilities with preliminary technical assistance on many matters without usurping the field of outside professional engineers, accountants, and lawyers. It is interesting to note that in Wisconsin the use of the technical staff of the state Commission has led to a considerable increase in intelligent and efficient use of high-grade professional service employed independently by the municipal water utilities. This development has aided in increasing operating efficiency along lines suggested by the Commission.

## 2. Financing

Wisconsin has had in effect for many years certain statutes which provide for the issuance of utility plant mortgage bonds, sometimes referred to as revenue bonds because they are amortized from revenues. Municipal utilities are usually financed through the issuance and sale of such mortgage revenue bonds or by general obligation bonds of the municipality. The Commission has no jurisdiction over either type of bonds. However, many thousands of dollars of mortgage revenue bonds have been issued and sold and in the majority of cases where bonds were issued water plant managers have requested the Commission to investigate the feasibility of these projects and to assist in setting up the proper accounting procedure specified in the statutes. In recent years there has been an increased number of these projects to which the Federal Government has given financial aid. The findings of the Commission as to the feasibility of such projects have been relied upon by the municipal utilities concerned. Moreover the fact that there has been no default in the payment of any municipal utility bonds in Wisconsin (with one exception which was occasioned by management rather than by lack of funds) apparently has made these bonds attractive to investors,

The Commission has aided efficient water plant operations in supervising the disposition of revenues. This involves the relations between the water plant as a utility undertaking and the municipality as a governmental unit. In some cases the municipal officials seem to think that through the operation of a water utility it would be possible to obtain

revenues to reduce taxes or to obtain necessary services, such as fire protection service, water used in public schools, public parks, and other municipal undertakings, without cost to the taxpayers or at reduced rates. In some communities the practice was to use a joint general fund and utility cash account with the result that utility funds could be diverted to municipal uses without detection. The outstanding example is the case of a municipal water utility's filing a sworn statement as to its financial status on December 31 in which it reported \$207,000 of cash on hand. A check by a Commission accountant shortly thereafter disclosed that the water utility did not have a penny on hand because the entire amount had been used by the city without making proper entries in its accounts and records.

In these situations the Commission has strongly recommended and sometimes required, first, that charges for fire protection service and public uses of water be made at regularly established nondiscriminatory rates; second, that utility funds and municipal funds be kept separate; and, third, that the disposition of utility revenues be recorded clearly and accurately. These policies have been adopted by the Commission not with the idea of depriving the municipality of surplus earnings to which it may be entitled but to insure that the water utility, as a proprietary undertaking, shall be operated on a businesslike basis.

### 3. Accounting

Some of the financial difficulties recounted above have been removed or minimized by the Commission's supervision

over accounting and record keeping. In prescribing uniform systems of accounts for municipal water utilities, classified according to size, it was originally necessary to do considerable educational work. In some instances those in charge of the plants were apprehensive that proper methods of accounting might result in disclosures reflecting upon the capacity or integrity of the management. In a great many cases, particularly in the smaller communities, there was no one in the utility organization capable of keeping the records accurately. This latter situation seemed to prevail more frequently when plant managements changed with each change of municipal administration.

It is common practice, especially with the smaller plants, to have the city or village clerk keep the accounts for the utility in addition to performing his duties as a municipal official. This office is usually elective and it is a well-known fact that such clerks are not often elected because of their accounting ability. This has necessitated closer scrutiny of the accounts of such utilities and a continual educational program sponsored by the Commission for the benefit of the changing personnel entrusted with the responsibility of keeping the utility's records. The close accounting supervision and assistance given to municipal utilities has resulted in recent years in many requests that Commission accountants make annual audits of such utilities. These audits in a few instances have disclosed defalcations and assisted the utility management in correcting the conditions which gave rise to them. The assistance to the managements in improving their accounting practices

is given through correspondence, by review of annual reports of the utilities, and by field trips to go over accounting records and practices directly with the person doing the job from day to day. This has resulted in improved accounting practices whereby management obtains accurate and essential information necessary for businesslike operation.

Where the accounts and records were very poor, the Commission staff has prepared original cost valuations for the purpose of properly restating the accounts. In other instances the valuations prepared by the Commission staff in connection with acquisition cases have been helpful in properly stating or adjusting the water utility accounts.

Where municipally owned water utilities have been managed by a nonpartisan board whose personnel was more or less permanent, the Commission has had little difficulty in securing hearty cooperation in placing in effect a uniform system of accounting. Such boards were quick to recognize the advantages of such a system. Moreover the Commission accountants by studying the accounts of the various water utilities have become familiar with the operating details of each system to such an extent that often they have been able to suggest possible economies and improvements. Likewise the Commission's rates and research staff has prepared various statistical studies which have provided valuable information to plant managers.

The Commission has felt warranted in stressing uniform accounting and the keeping of proper operating records because accurate records of accounts are the first prerequisite of

businesslike operation. Unless a plant manager knows where revenues come from and how funds are disbursed he cannot determine whether the plant is earning money or losing money.

#### 4. Legal Advice

Particularly in smaller communities, water plant managers are not familiar with the legal phases of their operations nor do they have ready access to attorneys familiar with such matters. Local attorneys are often unfamiliar with matters of utility law. Frequently, therefore, the Commission's legal staff is consulted for advice in handling legal problems that may arise. Because of the state-wide scope of the Commission's activities, its legal staff is able to bring to bear on a particular local problem the experience and information gained from dealing with similar problems in other communities over a long period of years.

The legal staff has been called upon to answer countless questions relating to financing, assessments, extensions, administration, metering, taxation, creation of municipal utility commissions, the personnel of utility commissions and their dealings with the utility, funds of municipal utilities, and procedure for the acquisition of existing utilities by a municipality and establishment of new water utilities in those municipalities where there is no existing utility. The Commission's legal staff has been asked to draft contracts, agreements, and ordinances; to advise municipalities and citizens with respect to the eligibility of the personnel of municipal utility commissions. It has analyzed and given advice on proposed extensions

into unserved contiguous municipalities, answered numerous questions arising out of the relations of the municipal utility with the municipality as a political subdivision and its relations with its customers.

Many questions have also arisen relating to the use of utility funds by the municipality, and the department has been requested to advise whether a municipal utility could loan money to the municipality on the latter's promissory note. Wisconsin <sup>3/</sup>law defines the type of investment a municipal utility may make with utility funds. This has given rise to many questions both by municipalities and by the management of municipal utilities over the disposition of the net revenues received from the water department.

The legal department has drafted ordinances for the creation of utility commissions setting forth the terms of members, eligibility, organization, duties of officers, salaries, powers, and disposition of funds. Letters have been received from almost every municipal water utility in the state inquiring as to whether a mayor or councilman is eligible to serve on the board or commission managing the utility.

To summarize, it may be said that over a long period requests for legal advice have been received almost daily from city attorneys and other attorneys, water plant managements, municipal authorities, and in a few cases from customers.

## 5. Service and Efficiency

The Commission has established minimum standards of service for the guidance of water utilities. These standards

place the responsibility for the character and quality of service primarily upon the utility which is required to make periodic tests of the quality of its water, to keep a record of the results of all such tests, to test meters used to measure the water supplied to consumers, to flush dead end mains and in other ways to secure an adequate supply of potable water.

Since the State Board of Health has concurrent jurisdiction as to the quality of water furnished, the Commission's rules provide that the quality of the water shall be such as to comply with the requirements of that board. Matters pertaining to public health are administered largely by the Board of Health while the Commission is concerned principally with providing adequate service at reasonable rates.

Many of the managers of municipal water plants were at first reluctant to make the necessary changes in order to improve the quality of their water supply, to insure the accuracy of meters, to provide sufficient pressure, etc. In part this reluctance may be attributed to a divided responsibility over service matters between the Commission, as a state agency, and the municipality. Since 1931, when the Public Utilities Law was revised, the Commission has had original and concurrent jurisdiction with municipalities over service matters including extensions of service. This revised statute removed the limitation on the Commission's power to act on its own motion to require improvements and extensions of service.

The Commission has assisted the management of numerous small water utilities to work out specific main extension projects,

sometimes where only general service was required and at other times where only fire protection was needed, or joint projects. Frequently water utilities have experienced difficulties and encountered public resentment through lack of uniform main extension rules and practices. In such cases the Commission has aided in the drafting of uniform extension rules which generally have had the effect of improving local public relations by elimination of discriminatory practices. In fact, a set of water utility operating rules and regulations has been drafted by the Commission staff and is often used as a basis for the rules of individual utilities. In such work the Commission acts as a clearing house for information on the best practices.

The Commission's staff of service engineers is constantly making service inspections in the field. In the course of this work opportunities arise for suggesting changes in plant or in operating practices which will increase the efficiency of operations. As an illustration, the Commission has repeatedly urged water utilities to install station meters at pumping stations or to meter unmeasured service to customers and thus detect water losses and eliminate waste. One study by the rates and research department of the effect of a concentrated metering program in a number of communities shows an average reduction of 44 per cent in pumpage, or in costs variable with pumpage, as a result of metering formerly unmeasured service. Likewise in these communities the metering program afforded means of checking leaks on the system and unaccounted uses of

water so that the percentage of lost water could be reduced.

## 6. Rates

Water plant managers in general are inclined to adopt rate schedules which are easy to administer but which do not provide a fair allocation of the costs of service among different classes of users nor avoid discrimination. Through the Commission's supervision over rates, water utilities have standardized rate schedules which are not regressive in character, which more fairly allocate the costs of supplying water to different classes of users, and which tend to promote more beneficial use of water. There is a notable lack of compiled rate information and the Commission's rates and research department has endeavored to remedy this by making various rate studies. As a result the water rate structure in Wisconsin is on the whole more uniform and more standardized than is the case in some other states. This uniformity not only aids municipal plant managers in avoiding complaints as to discrimination in their local communities but also aids consumers who may happen to move from one community to another and who do not as a result have to become acquainted with an entirely different type of rate schedule. The rates and research staff likewise has prepared tabulations of bills for water service in different communities which have proved valuable to plant managers.

## 7. Complaints

Local prejudices and political influences have resulted in many sharp conflicts in the administration of water plants.

The availability of the Commission for reviewing these controversies and settling complaints has tended to minimize the number and magnitude of these local controversies. Were it not for resort to the Commission, in some cases these local conflicts, whether between urban communities or between urban and suburban territories, might drag on interminably and result in waste of money, impaired service, and bad community spirit.

It is true that some people regard the Commission in its dealings with the managements of water utilities as a confirmed critic. They lose sight of the fact that these criticisms are intended to be constructive. Drastic treatment is resorted to only where circumstances call for such action. It has constantly been the aim of the Commission to keep its relations with water utility operators one of mutual assistance and satisfaction. Where criticism has been made it has been friendly and helpful in intent. After all, justifiable criticism is one of the implicit functions of a regulatory body in dealing with a monopolistic undertaking.

It has been with that friendly and helpful intent that the Wisconsin Public Service Commission has performed its work and has provided assistance to water utilities in organizing management, in financing, accounting, legal problems, matters of service and efficiency, establishing nondiscriminatory and adequate rates, and in settling general controversies and complaints which may arise regardless of the integrity and ability of those who are charged with operation and management of the utility.

1/ 196.01 Definitions. (1) As used in chapters 196 and 197, unless the context requires otherwise, "public utility" means and embraces every corporation, company, individual, association, their lessors, trustees or receivers appointed by any court, and every town, village or city that may own, operate, manage or control any toll bridge or any plant or equipment or any part of a plant or equipment, within the state, for the conveyance of telephone messages or for the production, transmission, delivery or furnishing of heat, light, water or power either directly or indirectly to or for the public. No cooperative association organized under chapter 155 for the purpose of producing or furnishing heat, light, power or water to its members only shall be deemed a public utility under this definition.

196.02. Commission's powers. (1) The Commission is vested with power and jurisdiction to supervise and regulate every public utility in this state, and to do all things necessary and convenient in the exercise of such power and jurisdiction.

196.02. (4)(a) The Commission shall have authority to inquire into the management of the business of all public utilities, and shall keep itself informed as to the manner and method in which the same is conducted, and may obtain from any public utility all necessary information to enable the commission to perform its duties.

2/ 66.06 (10)(a) In cities owning a public utility, the council shall and in towns and villages owning a public utility the board may provide for a nonpartisan management thereof, and create for each or all such utilities, a board of three or five or seven commissioners, to take entire charge and management of such utility, to appoint a manager and fix his compensation, and to supervise the operation of the utility under the general control and supervision of the board or council.

(b) The commissioners shall be elected by the board or council for a term, beginning on the first day of October, of as many years as there are commissioners, except that the terms of the commissioners first elected shall expire successively one each year on each succeeding first day of October.

(c) The commissioners shall choose from among their number a president and a secretary. They may command the services of the city engineer and may employ and fix the compensation of such subordinates as shall be necessary. They may make

rules for their own proceedings and for the government of their department. They shall keep books of account, in the manner and form prescribed by the public service commission, which shall be open to the public.

(g) In cities of the third or fourth class the council may provide for the operation of a public utility or utilities by the board of public works, in lieu of the commission above provided for.

- 3/ 66.06 (11)(c) The income of a public utility owned by a municipality, shall first be used to meet operation, maintenance, depreciation, interest, and sinking fund requirements, local and school tax equivalents, additions and improvements, and other necessary disbursements or indebtedness. Income in excess of these requirements may be used to purchase and hold interest bearing bonds, issued for the acquisition of the utility, or bonds issued by the United States or any municipal corporation of this state, or insurance upon the life of an officer or manager of such utility, or may be paid into the general fund.