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Government Affairs Office

Dedicated to Safe Drinking Water

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Magalie Roman Salas,
FCC Secretary
Office of the Secretary
Federal Communications Commission
The Portals, 445 Twelfth Street, S.W.
Washington, D.C. 20554

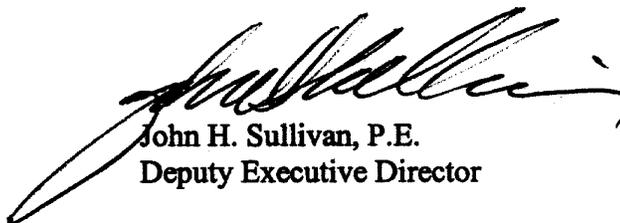
RE: WT Docket 99-87, Revised Competitive Bidding Authority

Dear Ms. Salas:

Enclosed are comments and 4 copies submitted by the American Water Works Association in response to the Federal Communication Commissions request for comments on WT Docket 99-87, Revised Competitive Bidding Authority.

AWWA appreciates the opportunity to offer the attached comments on this important rulemaking.

Best regards,



John H. Sullivan, P.E.
Deputy Executive Director

Attachments

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**Before the
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AUG 02 1999

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WT Docket 99-87

In the Matter of)
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Revised Competitive Bidding Authority)
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To: The Commission

COMMENT

**American Water Works Association
Jack H. Sullivan, P.E.
Deputy Executive Director
1401 New York Avenue, N.W., Suite 640
Washington D.C. 20005**

Dated: 2 August 1999

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EXECUTIVE SUMMARY

In the Telecommunications Act of 1996 the Congress charged the Federal Communication Commission (FCC) with the requirement that radio frequency spectrum for communication, both voice and data, be assigned as a result of auctions. In this act particular frequency spectrums were set aside for use by "public safety" organizations. In the Act, "public safety" was identified as police and fire protection services.

The Balanced Budget Act of 1997 directed the FCC to provide spectrum set-aside for a more broadly described "public safety services" including critical national infrastructure entities outside the auction process.

AWW supports the rulemaking petition submitted by the UTC, The Telecommunications Association, the American Petroleum Institute, and the Association of American Railroads proposing to create a third radio pool, in addition to the Public Safety and Industrial/Business Radio Pools already used for private radio frequencies below 470 MHz, to be known as the Public Service Radio Pool open to entities that do not qualify for Public Safety Radio Pool spectrum, but are eligible to use the public safety radio services that the Balanced Budget Act exempted from the Commission's auction authority. AWWA believes that this approach is feasible and appropriate for other frequency bands, including PLMR frequencies above 470 MHz.

INTRODUCTION

The American Water Works Association (AWWA) is an international, nonprofit, scientific and educational society dedicated to the improvement of drinking water quality and supply. Founded in 1881, the Association is the largest organization of water supply professionals in the world. Our 56,000 plus members represent the full spectrum of the drinking water community: treatment plant operators and managers, environmentalists, scientists, academicians, and others who hold an interest in water supply and public health. Our membership includes approximately 4,000 water systems that supply water to roughly 80 percent of the people in the nation.

Drinking water utilities are a critical component of our nation's infrastructure and as such play an vital role in ensuring public safety. Water distribution systems are critical to fire fighting in order to sustain water service, radio-based real-time control systems are used to maintain adequate supply and pressure in the delivery system. The inability of water systems to sustain service would disarm the fire fighters.

Water operations at typical public water systems (PWS) involve specific telecommunication applications in the treatment and distribution of drinking water. For these applications, the most effective medium is radio:

- Voice
- Data collection and control (Supervisory Control and Data Acquisition, known as SCADA)

- Video

Operational facilities at typical PWS include:

- Treatment plants
- Pumping stations
- Storage reservoirs and tanks
- System valves and regulators
- Flow, pressure, and quality monitoring

These facilities are dispersed over large geographic areas routinely measured in square miles and in some instances involving facilities separated by many miles. A treatment and distribution system must provide adequate potable water to:

- Individual residences
- Fire hydrants
- Medical facilities (i.e., hospitals, clinics, dialysis centers)
- Business and industry

It is significant to note that water system distribution piping and storage capacity is normally designed to meet fire flow requirements rather than normal water usage demands. This design requirement results in larger storage facilities, pumps, and water mains--all facilities which are managed and operated using telecommunications systems for timely, reliable information transfer.

SCADA systems in particular consist of radio-based real-time control systems that are critical to PWS operations. SCADA systems are used to control the remotely located treatment and distribution facilities described. For example SCADA systems are used to:

- Control and monitor water quality in water treatment plants and water distribution systems.
- Optimize pumping operations to maximize system operating efficiency
- Maintain water levels in storage reservoirs to meet fire flow demands
- Control distribution system pressures
- Deliver an adequate supply of water to sustain fire flows
- Security

SCADA plays a critical role in provision of a safe drinking water supply. With the increasing awareness of microbial and chemical contaminants and their potential public health impacts, continuous monitoring of water quality parameters throughout the distribution system become critical. Critical control parameters are collected from monitoring points in the water treatment and distribution system using SCADA systems. Data managed includes:

- Pressure levels, continuous pressure control is a tool to prevent ground and surface water from infiltrating into distribution facilities, providing a 24 hour check on system integrity.

- Monitoring of water chemistry at wellhead or surface water intake facilities to insure that treatment plant operation is optimized (water may subsequently reach the treatment plants in minutes requiring electronic communication).
- Provide water quality information on a continuous 24 hour cycle enabling process control adjustments to maintain water quality.
- Providing pressure and flow information not available locally but critical to the safe operation of equipment.
- Monitoring intrusion to prevent vandalism or sabotage.

Drinking water utilities are public safety service entities that serve individual communities of with specific geographic and jurisdictional boundaries. As a local service provider, drinking water utilities are managed by local government and state regulatory agencies, which control both the scope of their activities and supporting rate structures. Failure by the FCC to follow Congress's direction to provide (1) useful spectrum allocation for drinking water utility and other public safety radio service entities and (2) exemption from auction so that spectrum is available at a reasonable cost will both impede drinking water utilities' ability to meet federal water quality standards for human consumption and negatively impact their ability to support fire protection.

COMMENTS

The Balanced Budget Act of 1997, Public Law No. 105-33, Title III, 111 Statute 251 (1997) ("Balanced Budget Act"). The Balanced Budget Act revised the Commission's auction authority for wireless telecommunications services. AWWA believes that the timely implementation of the Balanced Budget Act provisions regarding spectrum access for critical infrastructure entities is critical to meeting a need expressly recognized by the U.S. Congress.

Exemption from Auction

The Balanced Budget Act of 1997 and associated report language provide clear legislative direction to the FCC to insure that "public safety radio services" as defined in the Act and report language are exempt from auction. In determining that there was a specific need for access to spectrum outside of the auction process, Congress implicitly recognized the need for adequate availability of spectrum to activities deemed "public safety radio services." And, that that spectrum should be made available to these activities through a mechanism other than auctions.

Definition of Public Safety Radio Service

The definition for "public safety radio services" as stated by Congress is broader than the current "public safety radio services." The Act and associated report language specifically avoid the use of language that would limit the applicability of this section to the current definition of public safety (i.e., police, fire, rescue applications).

The Balanced Budget Act of 1997 by reference and specific language describes "public safety radio services" as including private internal radio services that were:

1. Used by State and local government,
2. Used by non-governmental entities that,
3. Used to protect safety of life, health or property, and
4. Not made commercially available to the public.

The Balanced Budget Act of 1997 was accompanied by report language that provides a clear descriptive summary of public safety radio services that meet the private internal radio services definition included in the Act:

“The exemption from competitive bidding authority for “public safety radio services” includes “private internal radio services” used by utilities, railroads, metropolitan transit systems, pipelines, private ambulances, and volunteer fire departments. Though private in nature, the services offered by these entities protect the safety of life, health, or property and are not made commercially available to the public.”

Access to the exemption from competitive bidding authority for public safety radio service and associated spectrum allocations, is a function of the service provided “protection of safety of life, health, or property.”

Definition of Private Internal Radio Services

Access to the exemption from competitive bidding authority for private internal radio services should be held against the same yardstick as described above with the additional requirement that the radio service does not involve the commercial sale of the radio service itself. When applying this test of eligibility and the applicant will serve a group of users, all users must meet the eligibility tests of (1) used to protect safety of life, health or property and (2) radio service is not sold commercial.

Establishing a Public Safety Radio Service Pool

Joint supplemental comments filed by AWWA, UTC and several other utility associations clearly articulate a sound basis and initial structure for a Public Safety Radio Service Pool.

While the Joint Commenters believe these objectives are worthwhile, we caution that efforts to do so must be balanced with the public interest requirement that Critical Infrastructure Industry (CII) licensees and providers be assured of both the protection and overall spectrum capacity necessary to efficiently meet present and future needs. It is pursuant to these perspectives that the following is offered:

- Public Safety Radio Services (PSR) are statutorily exempt from auction authority;
- Use of designated spectrum by Critical Infrastructure Industry (CII) Providers is covered under the PSR exemption; and
- CII Providers require additional multiple address spectrum (MAS) channels to meet present and projected demand.

The existing channels at 928/952/956 MHz are exhausted in many areas of the country, and critical infrastructure providers have a growing need for additional channels. With respect to drinking water utilities only, there are more than 7,900 community water systems serving populations of 3,300 or more persons (1997 National Compliance Report, USEPA). **Each with**

a unique geographic service boundary, mix of competing telecommunications applications, and topographic constraints. The degree to which telecommunications are utilized plays a role at any one drinking water utility may vary but it is reasonable to assume that any water system serving more than 3,300 persons has (1) a need for interoperability with emergency responders, (2) voice telecommunication needs, and (3) applications for which data transfer for control and system operations via MAS frequencies would be the most effective means of communications.

With increasing regulatory pressure under implementation of the 1996 Safe Drinking Water Act Amendments, all drinking water systems will be seeking to:

1. Increase source water protection by monitoring water quality through use of remote data acquisition systems;
2. Improve remote treatment management systems and process control;
3. Increase distribution system operational control; and
4. Enhance system efficiency.

These modifications are directed at protecting the public from both acute pathogenic and chemical and reduction of chronic lifetime health risks. Because the management of water treatment and distribution is not simply the transport of an existing commodity from one place to another, but the delivery of a product that is subject to stringent safety requirements as it is delivered to the customer, drinking water management must be effectively controlled from source-to-tap. Many systems will need to either introduce or expand their telecommunication systems, particularly MAS SCADA applications, to address this management issue, as well as, ensure adequate water supply.

Water utility MAS applications will be geographically unique and constitute key communication links in a critical infrastructure system recognized by the President's Commission on Critical Infrastructure Protection (PCCIP) and the President's National Security Telecommunications Advisory Committee (NSTAC). In heavily urbanized areas -- and there are more than 330 water utilities with population served greater than 100,000 persons -- existing users are already experiencing difficulty obtaining adequate spectrum in MAS bands appropriate for SCADA.

Since proliferation of 931 MHz common carrier paging established under Rule Part 22.531, MAS systems in major metropolitan areas began to suffer reliability problems caused by overwhelming interference. Metropolitan areas with this problem include: Washington / Baltimore, Miami, Houston, San Diego, Los Angeles, San Francisco, Chicago, Detroit, and many other areas. In these urban areas drinking water utilities compete with: paging services, financial systems, security systems, utilities, and other users currently and find themselves constrained by (1) available resources (including those imposed by PUCs) and (2) the absence of unoccupied spectrum in the MAS band.

As AWWA stated in its comments supporting the UTC petition for rulemaking regarding creation of a public service radio service under FCC rule Part 90 (RM-9405), AWWA member utilities in metropolitan regions and even rural areas are noting an increase in interference problems and they attribute those problems in part to refarming and recent changes in the frequency coordination process. AWWA members are particularly interested in the use of radio

spectrum for data transfer applications, which require minimal interference; thus reports that inadequate coordination in some areas (e.g., New Jersey) is endangering emergency voice communications is very alarming.

AWWA is also concerned that the current coordination process does not recognize that public's need for existing critical national infrastructure applications. For example, earlier this year a commercial voice dispatch operation was assigned a frequency where a Florida wastewater utility system operated a data transmission system that controlled all of its remote pump stations (e.g., sewage lift stations). The public health consequences of that drinking water or wastewater treatment utility losing control of its treatment, storage, or transportation (i.e., distribution system for drinking water and collection system for wastewater treatment systems) system are significant. AWWA strongly supports introduction of a sound coordination practice to prevent interference impinging on the function of vital critical national infrastructure telecommunication systems in the private land mobile bands. The creation through this notice and comment of a public safety service pool offers the potential to address the interference issue in private land mobile and minimize its occurrence in other bands.

In summary, AWWA supports the formation of a public safety radio service pool using the definition of "public safety radio services" intended by Congress in the Balanced Budget Act of 1997 and associated report. The public safety radio service pool should include at least 6 MHz of spectrum, with the majority of that allocation above 900 MHz. The pool should include:

1. 928-952-956 MHz MAS band, where current licensee is a member of the original Power Services Pool.
2. 932-941 MHz MAS band, a minimum of 20 channel pairs
3. 6, 11, and 18 GHz microwave bands, which are currently in use for private internal radio service.
4. 700 MHz band for interoperability with emergency responders.

These bands are identified based on: (1) appropriateness for radio applications typical of critical national infrastructure entities which are eligible for this pool, (2) current installed equipment base and availability of equipment suitable for critical national infrastructure entity applications of this spectrum, and (3) historical use of this spectrum by critical national infrastructure entities.

Noncommercial Proviso

Paragraph 4 NPRM WT-99-87 asks:

"... should we {FCC} also adopt an exception that would consider services to be not commercially available even though the licensee receives compensation, if the compensation is received under a nonprofit cost-sharing or cooperative agreement, or as a multiple licensed system?"

Yes, cost sharing or cooperative agreements facilitating cross communication capabilities and promote spectrum efficiency.

It is quite common for fire departments at the scene of a fire to communicate with police for crowd control and with water departments for water pressure control. Numerous lives have been saved by intra-agency programs like the Detroit Water and Sewerage Department's "Eyes and Ears" program that takes advantage of its personnel on the road in radio equipped vehicles to provide surveillance and reporting of fires and suspicious activities. These agencies have traditionally been subdivisions of local government, but there has been a trend toward privatization in the drinking water industry. An exemption to allow cost-sharing or cooperative agreements is a necessity to allow the natural linking of these services to continue in a manner that best serves public safety regardless of ownership.

In many instances, drinking water systems extend their operations to surrounding areas beyond the corporate limits of the governing city, and the ability to operate on shared frequencies that include the drinking water system allow the police to maintain communications when pursuing suspects, transporting prisoners, or visiting regional courts outside of their city limits. Similarly, this also allows fire departments to maintain communications with their home base when assisting neighboring communities. These functions go beyond local cross connections on a common frequency with agents of other organizations at the scene. The privatization of a water system of any other critical infrastructure utility or government agency should not force the severing of these mutually beneficial linkages.

Where police, fire, water, and other agencies share a common communications system under the umbrella of local government, spectral efficiency is achieved by including the critical infrastructure agencies on a secondary user basis rather than requiring a license for additional channels that otherwise would be underutilized. When additional channels are necessary to accommodate the routine traffic from the operations of the secondary users, the additional channels can serve as backup channels available to the primary public safety users to supplement their operations in emergencies thereby reducing the total bandwidth of the combined system in comparison to stand-alone systems of comparable performance.

In the event that the FCC decides to assign separate pools for public safety and critical infrastructure users (i.e., paragraph 2), the concept of primary and secondary users should be incorporated in the definitions to accommodate spectrum sharing. Otherwise, privatized agencies would be excluded, and enterprise divisions of state and local governments would be forced from the pools to exclusive use of public safety frequencies to take advantage of priority based channel sharing.

Band Manager Licenses

The following items address the paragraphs in WT 99-87 describing the FCC's request for comments on Band Managers for Private Radio Services (PRS). These paragraphs are 91 through 98 of the NPRM.

As reference, the PRS definition in the docket is as follows, (found in paragraph 8).

... services that do not involve the receipt of compensation from subscribers, "i.e., that were for internal use." See H.R. Rep No. 103-111 at 253. Generally, private radio

services are used by government or business entities to meet internal communications needs, or by individuals for personal communications.

The Balanced Budget Act defines "public safety radio services" to include private internal radio services used by State and local governments and non-government entities, and including emergency road services provided by not-for-profit organizations, that (i) are used to protect the safety of life, health, or property, and (ii) are not made commercially available to the public.

This second reference places water and wastewater utility entities with the PRS, and therefore exempt from public auction.

Paragraph 91

AWWA believes the current regulations and practices followed for Private Land Mobile Radio Services (PLMRS) license application meet current and projected needs for internal communications when coupled with the bandwidth allocations under current FCC definition. AWWA does not believe that establishment of Band Managers (BMs) is necessary to meet these ends.

Paragraph 92

The discussion presented in paragraph 92 indicates that a BM license would be granted to a BM by the FCC, who could the use the license for one, or both of the following scenarios:

1. Contract with end-users PRS-eligible entities for operation over BM-licensed spectrum under a negotiated fee for service agreement. Referred to as a "sublicense arrangement."
2. Offer internal communications – only to the BM entity.

AWWA strongly opposes the first scenario on several grounds. The first of which is opposition to the reseller arrangements for public safety spectrum. Why should PRS users be obligated to pay for spectrum if the Congress has stipulated these agencies are exempt from public auction, and by default, are obligated to follow existing regulations that are devoid of compensation.

Secondly, the BM would, for financial interest, seek the highest market price for spectrum, easily leading to exclusion of some eligible entities from not only their currently licensed frequencies, but for additional frequencies as growth occurs in both geography and in population served.

A further objection to this approach is based on the term-related authorization of spectrum to a BM, and as follows, a term limitation to "sublicensee." It seems inefficient to limit the BM term for its license in a sense that automatic renewal is not an option. If a BM either decides not to renew its license for financial or other reasons, or the license is "auctioned" to another BM entity, the PRS entity is faced with a probable disruption of service as best, and a loss of spectrum at worst. Not only are these cases financially devastating to a PRS entity, they are entirely out of their control, and therefore contradictory to the premise of "protecting the safety of life, health, or property" of the public.

Paragraph 93

AWWA believes the concept of BMs is not consistent with the FCC obligations stipulated by the Telecommunications Act. Both impartiality and spectrum efficiency issues would become clouded.

Paragraph 94

As stated in paragraph 94, the FCC lacks a reliable method for objectively gauging current and future demand for private spectrum. AWWA does not agree that the BM concept will enable market forces to define these needs any more reliably. We believe a better gauge would be a detailed survey and analysis by the PRS entities comprising the "marketplace." For example the estimated needs of utilities was prepared and submitted to the FCC by the UTC in 1998.

Paragraph 96

AWWA believes that competition between BMs will not "ensure that the available spectrum is used in the most economically efficient manner to meet the needs of the private user community." While this model has been successful in the commercial sector, that sector differs drastically from the requirements of the PRS entity. The SMR and PCS models are not workable solutions for the needs of the PRS entities, hence their investment and reliance on "private" radio systems.

It is unlikely that any utility entity would become a BM due to the costs (auctions) associated with obtaining such a license from the FCC. The utility users would need to operate with sublicensee status, an undesirable situation, as described in these comments earlier.

Compared to the current system of frequency coordination and direct licensing of private users, the BM approach **would not** ensure that spectrum is used more efficiently. The authorization for BMs to charge private users for spectrum will limit availability to utilities, as other "private" users with more capital resources would force the "market" price up. Utilities would be forced to raise their operating budgets at the expense of increased public rates for their services, if the cost of spectrum access remained within the realm of financial practicality.

BMs would definitely have a greater incentive than frequency coordinators when making spectrum available because of the profit-generating opportunity. This is the very reason that the proposed BM plan is inappropriate. For-profit dispensation of licenses is not equitable in the public sector where utilities operate.

If the BM plan is adopted, it should be done so outside of the PRS. For the reasons state above, AWWA strongly believes that utility entiteis would be severely limited in using spectrum for private internal services under the BM approach. Costs would increase: radio service will likely degrade even further from the current levels historically afforded by private spectrum; and public safety, health, and property would be jeopardized.

Paragraph 97

AWWA opposes the distribution of BM licenses in the PRS for the reasons described earlier in this response.

Paragraph 98

AWWA opposes the distribution of BM licenses in the PRS for the reasons described earlier in this response.

Build Out Period

Paragraph 100 NPRM WT-99-87 proposes to limit speculation by limiting the build out periods from the current time period (up to 18 months) to as little as 5 months. This proposal will be problematic for utilities, particularly for public drinking water utilities, when they have to contract out for construction of facilities to use the license(s). For example, a major regional drinking water supplier in Massachusetts, the Massachusetts Water Resources Agency (MWRA) licensing of the MAS system developed under a build out limit of 12 months, had to ask for an extension on one of its licenses, because the time required to advertise, bid, and award a contract, and then for the contractor to erect the towers for the system. This process simply could not be done within the time frames allowed by law for a public agency. Furthermore, budget oversight at the local and regional level may not allow the advertising of a construction contract before the licenses are received. While an extension mechanism would provide additional time, the FCC is under no obligation to grant such an extension. In the particular example above, such a denial would have resulted in a substantial fiscal loss for MWRA, and prevented the implementation of its SCADA system.

Drinking water utilities are not in the business of building radio facilities, nor are they private entities with deep pockets. A speculator not a legitimate public safety service entity, such as a drinking water supplier, is more likely to have resources and limited public fiscal oversight and hence be more likely to be able to construct a radio facility in a short build out period. Given the oversight structures typical of local government, build out periods as short as 5 months would not be feasible for drinking water suppliers and other public safety service entities. Build out periods on the order of 18 months are more reasonable.