



May 9, 2013

California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. **12-AAER-2C**  
1516 Ninth Street  
Sacramento, CA 95814-5512



Via electronic mail to: [docket@energy.ca.gov](mailto:docket@energy.ca.gov)

RE: Docket Number: 12-AAER-2C; Water Appliances

Dear Commissioners:

On behalf of the Natural Resources Defense Council (NRDC) and our more than 250,000 members and online activists in California, we respectfully submit this comment letter in response to the California Energy Commission's (CEC) Invitation to Participate (ITP) for the 2013 Appliance Efficiency Pre-Rulemaking, regarding water appliances. NRDC is a non-profit, non-partisan international environmental advocacy organization, with a staff of over 400 scientists, attorneys, and policy experts, which uses public policy, advocacy, public education, sponsorship of scientific studies, and litigation to protect the planet's wildlife and wild places and to ensure a safe and sufficient water supply for all living things.

NRDC has collaborated with the California Investor Owned Utilities (CA IOUs) ITP submittals for toilets and urinals, faucets and faucet accessories, and water meters and generally supports the descriptions, data, and savings estimations provided for water appliances. NRDC would specifically like to highlight the following:

### **TOILETS AND URINALS**

In 2007, the California Legislature enacted AB 715, which establishes more stringent standards for covered types of toilets and urinals to take full effect January 1, 2014. Title 20 regulations need to take AB 715 into account and set standards at least as stringent as those enacted by statute.

The EPA estimates that there are 222 million residential toilets nationwide. In addition to the existing stock, approximately 10 million new toilets are sold each year for installation in new homes or replacement of aging fixtures in existing homes. Based on a 12% share, it's estimated that California has approximately 27 million toilets and that approximately 1.2 million new toilets are sold each year in the state. Residential toilets account for approximately 30 percent of

indoor residential water use—equivalent to more than 252 million gallons of water consumed each year.

Important Data Sources:

- Assembly Bill No. 715, 2007.  
<[http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab\\_0701-0750/ab\\_715\\_bill\\_20071011\\_chaptered.pdf](http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_0701-0750/ab_715_bill_20071011_chaptered.pdf)>
- U.S. Census Bureau, American Housing Surveys for the United States, 1970-2003  
\*California rates were found by taking 12% of U.S. numbers found.
- Plumbing Fixtures Market Overview: Water Savings Potential for Residential and Commercial Toilet and Urinals. D&R International. September 30, 2005.
- Mayer, Peter W. and William B. DeOreo. Residential End Uses of Water. Aquacraft, Inc. Water Engineering and Management. American Water Works Association. 1998

**FAUCETS AND FAUCET ACCESSORIES**

The EPA estimates that there are 222 million lavatory faucets nationwide. In addition to the existing stock, approximately 25 million new faucets are sold each year for installation in new homes or replacement of aging fixtures in existing homes. Based on a 12% share, it's estimated that California has approximately 27 million lavatory faucets and that approximately 3 million new lavatory faucets are sold each year in the state. Of these 3 million faucets, roughly two-thirds of those are lavatory faucets (approximately 2 million units). Residential faucets (both lavatory and kitchen) account for approximately 15.7 percent of indoor residential water use — equivalent to more than 132 billion gallons of water used in California each year.

On December 22, 2010, the DOE officially waived Federal preemption for energy conservation standards with respect to any state regulation concerning the water use or water efficiency of faucets, showerheads, water closets, and urinals. This waiver allows states to set their own standards for the relevant plumbing products as long as the state standard is more stringent than the federal standard, which is currently 2.2 gpm at 60 psi. The City of Los Angeles adopted a standard stricter than the federal standard requiring a maximum flow rate of 1.5 gpm at 60 psi with an effective date of September 4, 2009. The New York City and the State of Georgia have also adopted the same stricter standard.

Important Data Sources

- City of Los Angeles, California. *Water Efficiency Requirements for New Development and Renovations of Existing Buildings*. 2009. Ordinance Number 180822  
<[http://clkrep.lacity.org/onlinedocs/2009/09-0510\\_ord\\_180822.pdf](http://clkrep.lacity.org/onlinedocs/2009/09-0510_ord_180822.pdf)>
- WaterSense High-Efficiency Lavatory Faucet Specification Support Statement  
\*California rates were calculated by taking 12% of U.S. numbers provided, (assumes California population comprises 12% of US population)
- U.S. Census Bureau, American Housing Surveys for the United States, 1970-2003.
- Business Trend Analysts, 2006. "2005/2006 Outlook for the U.S. Plumbing Fixtures and Fittings Industry."  
<[www.mindbranch.com/catalog/print\\_product\\_page.jsp?code=R225-358](http://www.mindbranch.com/catalog/print_product_page.jsp?code=R225-358)>

- Mayer, Peter W. and William B. DeOreo. Residential End Uses of Water. Aquacraft, Inc. Water Engineering and Management. American Water Works Association. 1998.

## **WATER METERS**

Accurate accounting of water is essential for advancing water efficiency efforts in the State of California. Residential water meters are used by water suppliers to record customer water consumption. According to the IOU ITP submittal, there are approximately 9 million single family homes in California; NRDC estimates that 90% of these single-family homes that are required to be metered under the 2004 Assembly Bill 2572 currently have residential water meters. The accuracy of meters is an important factor in accounting for water losses, both in the distribution system and on the customer side. The American Water Works Association (AWWA) has developed voluntary standards for several types of water meters, but these standards are not adequate. In fact, the minimum flow rates at which meters are required to be tested under AWWA standards have not changed since the first AWWA standard for cold water meters was proposed in 1921. Current standards need to be improved to keep up with today's water meter technology.

None of the current meter standards require meter testing at extended low flows indicative of typical customer side leakage, and the EPA notes that ten percent of homes have leaks that waste 90 gallons or more per day (<http://www.epa.gov/WaterSense/pubs/fixleak.html>). In addition, Waterwiser.org estimates that 20% of toilets leak. As stated previously in this letter, there are about 27 million residential toilets in California alone, over 5 million of which could have leaks.. Meters that simply meet the current AWWA standards may allow leaks as large as 200 gallons per day to go undetected. Developing a standard to address meter accuracy at extended low flows would ensure that the most common residential water meters sold in California are capable of adequately measuring water at extended low flows.

This issue is particularly important for California because of our current building code. The California State Building Standards Commission adopted the 2010 California Residential Code, which includes the 2009 International Residential Code as established by the International Code Council in September 2008. A key component in the 2010 code adoption is the addition of residential fire sprinklers in all new one-and two-family dwellings and townhouse construction statewide. To accommodate for the potential high flow a sprinkler system would require if used, many utilities are simply increasing the sizes of the water meters. This practice has the effect of reducing the utility's ability to measure low flows in the home. In addition to not detecting leaks, these meters may also be unable to detect the use of some faucets, drip irrigation usage, and other low flow activities.

It should also be noted that water providers cannot directly charge for usage that is not detected by meters, therefore water meters that accurately measure at extended low flows allow utilities to provide a better price signal to water utility customers. It is our assertion that the price signal would provide incentive for end-users to act to eliminate leaks and reduce total water consumption. Because significant energy is required to deliver potable water, saving water in turn saves energy.

For the reasons above, NRDC and a group of water utility partners, including American Water, Inc., the parent company of California-American Water Company, submitted a joint proposal to the American Water Works Association requesting that AWWA revise water meter standards to include requirements for accuracy testing at extended low flows indicative of leaks.

Important Data Sources:

- NRDC and Water Utility Partners Joint Proposal to Revise AWWA Water Meter Standards  
< [http://docs.nrdc.org/water/files/wat\\_13032601a.pdf](http://docs.nrdc.org/water/files/wat_13032601a.pdf).
- Barfuss, S.L., M.C. Johnson, & M.A. Neilson. 2011. "Accuracy of In-Service Water Meters at High and Low Flow Rates." Denver, CO: Water Research Foundation.
- DeOreo, W. 2011. "California Single Family Water Use Efficiency Study." Boulder, CO: Aquacraft.
- Richards, G.L., M.C. Johnson, and S.L. Barfuss. 2010. "Apparent Losses Caused by Water Meter Inaccuracies at Ultralow Flows." *Journal AWWA* 102 (5): 123-132
- Residential Fire Sprinkler and California Codes  
<<http://osfm.fire.ca.gov/codedevelopment/residentialsprinklerandcacodes.php>>

Additionally, the primary source of available data on meter accuracy at extended low flows (Barfuss, 2011) was limited to small meters (5/8" x 3/4" to 2"). The size of a meter is inversely related to its accuracy at low flows, therefore larger meters may represent an opportunity for even greater water and energy savings. More information is needed on the low flow accuracy of meters larger than 2-inches.

Thank you the opportunity to participate in this process and for your consideration of these views.



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