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**Date:** 6/15/2009 4:47 PM  
**Subject:** Comments Docket No. 09-AAER-1A

California Energy Commission  
 Dockets Office, MS-4  
 Re: Docket No. 09-AAER-1A  
 1516 Ninth Street  
 Sacramento, CA 95814-5512

Dear Commissioners:

RE: 2009 Irrigation Equipment Performance Standards Comments

I appreciate the opportunity to provide comment on the Commission's proceeding to establish minimum standards for irrigation controls. I am a Registered Landscape Architect (RLA 2143), Certified Irrigation Designer, Water Sense Partner with over thirty years experience designing observing installations and managing irrigation controllers and systems.

As I'm sure you're aware, efficient landscape irrigation is a difficult puzzle to solve and there are no magic bullets including self-adjusting controllers. While self-adjusting controllers do not provide a total solution to the problem of over-watering they provide significant step forward higher water efficiency.

A recent study prepared by Aquacraft Water Engineering and Management titled Evaluation of California Weather-Based "Smart Irrigation Controller Programs found the water savings statewide were only six percent which was lower than expected and that 42 percent of sites applied more water than the conventional controller it replaced. Yet there are many examples where water savings was much higher. The most reasonable explanation for these disappointing findings has to do with improper programming by the end user and not the technology itself. The weakest link is the contractor who is money driven, not result driven. The contractor sets up the controller and is out of there. Bad inputs result in bad outputs regardless if conventional or self-adjusting.

Some of the positive results in the report were that 56% of the controllers saved water. All the technology saved water, though some more than others. And what is very encouraging is that the early data suggests the water savings increase over time. This is probably because people are finally realizing that fine tuning is necessary to calibrate the smart controller default settings to the specific conditions of the site.

Some are saying Smart controllers are not ready for prime time, are difficult to program, and can increase irrigation. If you compare scheduling a conventional controller efficiently to scheduling a self-adjusting controller efficiently, the smart controller is easier to program. The key word here is 'efficiently.' If you are only using rule of thumb to schedule a conventional controller, like ten minutes, every station, five days per week you would conclude that a conventional controller is easier to program than a smart controller. But if you want to schedule a conventional controller efficiently you have to consider all the science that is built into a self adjusting controller and here the Smart controller is far simpler to use. We do not need additional studies. Additional studies will only give us the same result. The studies that are out there have established that the technology works if they are set up properly.

I believe the 42% of sites that increased water use would not have done so if the minutes programmed into the conventional controller were recorded before installing the self-adjusting controller and were compared to the minutes that the same station would water after the self adjusting controller was installed. If after programming the self-adjusting controller it showed it would water more minutes per week then the installer would tweak the schedule to water no more than the conventional controller. If this had been done, the savings would have been significantly higher.

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**DATE** June 15 2009

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Because water resources are so limited in California and in many other areas of the United States and world we need to regulations to insure a dependable supply. I believe 1881 established that priority correctly. Although it is possible to program conventional controllers efficiently, few people have the time or know-how to make the necessary manual adjustments. Every major manufacturer of irrigation products has developed a self-adjusting controller. This technology is here to stay and, in spite of the poor results of some studies, can play a significant role in demand management in California.

I prefer to link the performance standards to SWAT or EPA. They have already gone down a long road. There is some thought that a longer testing period of perhaps 90 days rather than 30 days would create a wider spread in the performance results but the basic protocols provide a sound basis for labeling products as water efficient.

A specification for a smart controller might include the following:

1. Include soil moisture sensors and add-on devices in the specification. Note a \$20 controller with a moisture sensor can be programmed to water efficiently.
2. SWAT tested with a maximum, minimum and mean performance standard for irrigation adequacy and irrigation excess.
3. Allow for adjustable crop coefficients. Crop coefficients that are programmable for each station from a predetermined list and can be customized by user.

I greatly appreciate the opportunity to comment and hope you proceed in the development of a standard that promotes higher irrigation efficiency in the future. If you have any questions, please contact me at (510) 206-6278.

Sincerely,

Scott Sommerfeld, Landscape Architect, RLA 2143  
Certified Irrigation Designer  
Water Sense Partner