



Accurate WeatherSet

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2009 Irrigation Equipment Performance Standards and Labeling Requirements proceeding Scope”

From: Andrew Davis, President of Accurate WeatherSet

Loraine White said in her opening presentation on the slide labeled “Issues to Address” that the Energy Commission was asking “What Studies and assessments should the Commission rely on?” This paper addresses that important issue.

1. Do NOT use the IA/SWAT protocol to set standards for irrigation controllers. Instead, use the multi-year field testing of ET controllers funded by Prop 13.

The IA/SWAT testing protocol is only testing one controller from each manufacturer and only testing that one controller for 30 days. **Thirty days is too short to measure water conservation.** Any timer, even dumb timers from the 1980s, could be programmed to “pass” this 30 day test.

The IA/SWAT protocol contains crop coefficients for each month of the year which shows that some plants need 40% less water in the winter. The 30-day test period cannot test the controllers for this 40% water savings over 12 months. Also, the 30-day test cannot test for water conservation due to changes in seasonal weather.

The Prop 13-funded, multi-year field studies of thousands of controllers can test for the 40% water savings over time and can test for water conservation due to changes in seasonal weather.

2. The programming and installation of the SWAT testing is NOT realistic for all controllers.

The one controller from each manufacturer that IA/SWAT protocol tests is programmed by the engineers of the manufacturer and installed by either the manufacturer or highly literate professionals at Cal State Fresno. The Prop 13-funded, multi-year field studies involve **installation and programming** of thousands of controllers **by homeowners and contractors**. Results from these Prop 13-funded tests reveal water savings achievable by homeowners and contractors. The IA/SWAT 30-day testing of one controller from each manufacturer has no value indicating potential water savings from installation and programming by homeowners and contractors.

3. For controllers that provide daily broadcast ET to their controllers, the testing is NOT realistic. The manufacturers of these broadcast controllers have an IDEAL setting of the test. The test site is about a mile for the DWR CIMIS station. Such testing is irrelevant when the controllers are installed in places with no DWR CIMIS station such as the San Fernando Valley where 1.2 million people water their laws and there is no DWR CIMIS station to measure local ET. The Prop13-funded, multi-year field studies do study the performance of these broadcast ET controllers when they are separated from DWR CIMIS stations.

4. The Prop 13-funded studies are showing that some controllers that did well in 30-day SWAT testing actually INCREASED water consumption when installed and operated by homeowners or contractors for multiple years. With other controllers, no water was conserved. The people of California spent millions of dollars on these field tests. The results should be honored and used to select controllers for general sales in California starting in 2012.

These are the 4 technical reasons why the Energy Commission should use Prop 13-funded, multi-year field studies to rate controllers for inclusion under the mandate of AB1881.

5. In the interest of water/energy conservation, I propose that only controllers showing significant water saving in Prop 13-funded studies are allowed general sales in California starting in 2012 under AB1881.

Manufacturers showing poor results under these studies should be offered the opportunity to return to sites which wasted water to fix their wasteful or non-conserving controllers. Then those controllers will be monitored by the water district to verify that the manufacturer has stopped wasting water and begin conserving water. This verification will take at least one year. Upon verification, these controllers would be permitted for sale in California under AB1881.

Systems dealing with biology need time for verification. Look at the lengthy process used to qualify new drugs. The first round is testing to verify that no harm is done. The second round tests for efficacy. The manufacturers will say that 1 year is too long. The SWAT protocol was developed by manufacturers under the auspices of the Irrigation Association. The manufacturers specified 30 days of testing. It should not surprise anyone that Prop 13 field studies of thousands of controllers in the hands of homeowners and contractors gives different results than a 30-day test of a single controller from each manufacturer installed and programmed by highly technical people.

An acceptable, secondary role for SWAT testing of ET controllers is listed below.

6. In the interest of innovation, I propose that the DWR continue funding multi-year studies of new ET controllers as they may emerge after 2011. SWAT testing of 30-days may be used to qualify these new controllers/technologies for meaningful multi-year field testing.