Public Comment Submission on WaterSense® Revised Draft Specification for Weather-Based Irrigation Controllers

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Topic: Appropriateness of Labeling Weather-Based Irrigation Controllers at this Time

Comment: The Alliance for Water Efficiency (AWE) supports labeling of weather-based irrigation controllers.

Rationale: AWE views weather-based control as an important technological improvement. In addition to several studies regarding water savings, the Bonneville Power Administration has launched a two-year study in 2010 to quantify expected energy savings due to reduced water distribution pumping as a result of the use of weather-based irrigation controllers. Establishing these product specifications at this time positively influences technology development, and adds a key water- and energy-efficiency resource for professionals and consumers alike.

Suggested Change (or Language): None.

Topic: Definition of Weather Based Irrigation Controller: Exclude Soil Moisture Sensors

Comment: In our previous comments submitted January 2010 we suggested clarification of the definition of weather based irrigation controllers. Clarifying language in several sections of the January 2011 draft specification accomplishes this goal. However, soil moisture sensors are not specifically excluded as we suggested in January 2010**.**

Rationale: During our committee discussions we concluded that since soil moisture is not a component of weather, language excluding soil moisture sensors is not needed. The language in section 1.0 excluding rain sensors when used alone is sufficient clarification regarding weather related sensors.

Suggested Change (or Language): None.

Topic: 1.0 Narrowing Scope to Controllers that use ET

Comment: Unfortunately the introductory text of section 1.0 continues to narrow the scope to include only devices that utilize ET.

Rationale: AWE believes it is in the interest of all concerned that the doors remain open for currently unknown technology to earn the WaterSense label if it can be tested and proven to perform according to this specification.

Suggested Change (or Language): 1.0 First paragraph, last sentence: This specification applies to controllers that create or modify irrigation schedules reliably comparable to evapotranspiration (ET) principles and methods such as: (followed by the bullet list in section 1.0 with "or" after each bullet)

Topic: 1.0 Application of Specification

Comment: The January 2011 draft specification partially addresses AWE concerns regarding application of the specification as determined by number of zones by not specifying any number of zones. However, the current text "this specification applies to controllers for use in residential or commercial settings" is open to wide interpretation.

Rationale: The SWAT protocol "was developed to test products designed and sold for use at homes and similar scale light commercial and institutional properties." The protocol "may not be suitable for products using larger more demanding systems used at parks, golf courses, etc." It might make sense to include SWAT scope language because it is consistent with the intent of the protocol on which this WaterSense specification is based.

Suggested Change (or Language): Replace last sentence in 1.0 with: This specification applies to controllers used at homes and similar scale light commercial and institutional properties. This specification does not apply to central control systems.

Change stand-alone controller definition:
This includes a single controlling device (i.e. the irrigation controller) and all of the on-site sensors and/or on-site receiver for direct climatological data without intermediary hardware/software.

Add to definitions section:
Central control system: A system of one or more controllers connected to a central processing unit or other intermediary hardware/software interface between the controller and a weather station.

Topic: Section 4.0

Comment: The January 2010 AWE comments specifically pointed out that 4.2 and 4.4 of the November 2009 draft specification were nearly identical. AWE also suggested performance based criteria rather than restrict innovation due to prescribed criteria. AWE applauds most of the January 2011 draft specification changes to 4.0 Supplemental Capability Requirements.

Rationale: The table format of the January 2011 draft specification is concise, readable and easy to understand. The current language in 4.0 is for the most part performance based.

Suggested Change (or Language): See following comments regarding section 4.0

Topic: 4.3 Indicating to the User when the Controller is not Receiving a Signal or Local Sensor Input

Comment: The table titles for columns make it unclear whether the capability is required when the controller interface indicates that the controller should be in smart/standard mode or whether the capability is required when the controller is actually operating in smart/standard mode. For example if a dial on a controller is set for smart mode on the controller and the weather sensor connection is lost, the controller interface says that the controller is in smart mode, but the controller is operating in standard mode. Adding an "X" to the smart mode column assures the capability for indicating to the user when the controller is not receiving a signal or local sensor input regardless of interface settings.

Rationale: User notification that a device is not adjusting irrigation based on current weather conditions due to an interruption in receiving signals and/or local sensor inputs is important for assuring water saving potential.

Suggested Change (or Language): Add a second 'X' under "Required in Smart Mode".

Topic: 4.5 Definition of Large Commercial Controller

Comment: Reinserting language regarding number of stations at this juncture, especially a large number of stations such as 48, creates ambiguity regarding whether this specification might apply to central control irrigation systems.

Rationale: While 1.0 defines the controller as stand-alone, it may be clearer to add language to exclude central control systems from testing and labeling using this specification.

Suggested Change (or Language): See AWE March 2011 comments regarding 1.0 Application of specification.

Topic: 4.5 Flow Sensor

Comment: Delete 4.5 in its entirety.

Rationale: 4.5 specifies a sensor unrelated to weather. In addition, while a flow sensor could very well save water, there is no testing protocol within this specification nor does AWE know of a third party testing protocol available or in development intended to assure flow sensor performance as there is with rain sensors.

Suggested Change (or Language): Delete 4.5 in its entirety.

Topic: 4.8 Manual Operation Limited to Two Hours

Comment: 4.8 appears to be written in response to AWE January 2010 comments (and perhaps the comment of others): "Manual operation – the controller shall allow for manual operation and troubleshooting test cycle at the physical location of the controller installation"

The manual operation of the controller runs each zone and then defaults to the original program. Total run time of all zones may be longer than two hours.

A troubleshooter test function runs each zone for a short prescribed amount of time to allow for visual/field inspection of operation of the equipment in each zone.

Rationale: The language of 4.8 can be construed to confuse the manual operation and the troubleshooting functions. The manual operation function can be used for troubleshooting therefore the language could be simplified.

Suggested Change (or Language): The controller shall be capable of allowing for manual operation. The window for manual operation shall be limited, and the controller shall automatically return to default mode, even if the switch is still positioned for manual operation.

Topic: 5.1 Packaging and Product Documentation Requirements: General

Comment: The Alliance for Water Efficiency (AWE) supports specifying that any controller sold with a transformer or power supply align with external power supply requirements for ENERGY STAR labeled product. As of December 31, 2010 ENERGY STAR discontinued labeling of power supplies and instead requires that external power supplies for ENERGY STAR labeled products (such as computers, displays and televisions) meet Level V as designated under the International Efficiency Marking Protocol.

Reference:
http://www.energystar.gov/ia/partners/prod_development/revisions/downloads/eps_eup_sunset_decision_july2010.pdf
Reference:
http://www.energystar.gov/ia/partners/prod_development/revisions/downloads/International_Efficiency_Marking_Protocol.pdf

Rationale: Water and energy efficiency should be addressed simultaneously in specifications whenever possible.

Suggested Change (or Language): Any external power supply intended for use with the controller shall be tested and labeled in accordance with the most recent version of ENERGY STAR specification for end-use products using external power supplies.

Topic: 5.1 Packaging and Product Documentation Requirements: General

Comment: The product should be packaged or marked to encourage initial adjustments of the default settings to maximize the potential water savings of smart controllers. An instruction or operator manual for a WaterSense labeled weather based irrigation controller would align this specification with the homeowner education requirement (5.1 Operating Manual) in the WaterSense Homes specification.

Rationale: Efficient irrigation programming is complex and complicated by many variables including the plant water requirement, irrigation equipment and layout, routine maintenance, soil type, slope,

sun exposure to name a few. In a practical sense the defaults provided by Smart controller manufacturers must cover a range of conditions. To maximize the potential water savings the initial settings need to be adjustments or calibrated to the unique conditions of the site. It is unrealistic to expect that the initial settings can hit the bull's-eye without initial fine tuning.

Suggested Change (or Language): The product packaging shall include an instruction manual that lists how the default settings can be adjusted to apply more or less water to each zone if, after operating for two weeks, the root zone is determined to be too wet or too dry.