

DOCKETED

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CALIFORNIA ENERGY COMMISSION

1516 Ninth Street
Sacramento, California 95814

Main website: www.energy.ca.gov
CEC-57 (Revised 1/19)

**FINAL STATEMENT OF REASONS**

Spray Sprinkler Bodies
Docket No. 19-AAER-01
Z # 2019-0416-02

UPDATE OF THE INITIAL STATEMENT OF REASONS

The regulation text was changed to move the information from subsection (y) into subsection (x) and make any related reference changes. This substitution has no impact.

LOCAL MANDATE DETERMINATION

The California Energy Commission has determined that this action will not result in a local mandate on local agencies or school districts.

CONSIDERATION OF ALTERNATIVE PROPOSALS

The Energy Commission determined that no alternative before it would be more effective in carrying out the purpose for which this action is proposed. No alternative would be as effective as and less burdensome to affected persons than the adoption of the proposed regulation; or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

In making this determination, the Energy Commission considered the alternatives discussed in the Initial Statement of Reasons, hereby incorporated by reference. In addition, the Energy Commission considered an alternative proposed during the 45-day comment period requiring regulated entities to be certified by the WaterSense program. However, the Energy Commission determined this would not be effective in carrying out the purpose for which this action is proposed because it would not allow the Energy Commission to independently confirm that an entity has complied with the underlying requirements, it would not allow the Energy Commission to independently enforce any such non-compliance, and it would not ensure continuity of the standard if changes to the federal program are made or the program is defunded.

The adopted regulations will not have a significant adverse economic impact on small business and no alternatives were proposed that would lessen any adverse economic impact on small business. The Energy Commission considered impacts to small businesses and alternatives in the Notice of Proposed Action, the Initial Statement of Reasons, and the Standardized Regulatory Impact Assessment. The Energy Commission used the consolidated definition of small business in Government Code section 11346.3(b)(4)(B) for purposes of this analysis. Small businesses involved in the distribution and sales of spray sprinkler bodies may experience increased wholesale

purchase prices due to the proposed standard, but the Energy Commissions expects these entities to pass through these increased costs to the consumer.

INCORPORATION BY REFERENCE

The Energy Commission provided in the Notice of Proposed Action that the following document would be incorporated by reference:

Appendix B of the EPA WaterSense Specification for Spray Sprinkler Bodies, Version 1.0, dated September 21, 2017.

This document is incorporated by reference because it would be cumbersome, unduly expensive, and impractical to publish in the California Code of Regulations. The document was made available upon request directly from the Energy Commission and available to the public on the Energy Commission website throughout the course of this rulemaking action.

SUMMARY OF RESPONSES TO PUBLIC COMMENTS RECEIVED

All written and oral responses to public comments, including acceptance of recommendations and justification when recommendations were not accepted, are attached to this Final Statement of Reasons, and included in tab 10 and tab 12 of the rulemaking file.

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
26	A3	N/A Hunter Industries	<p>“(A) Spray Sprinkler Bodies. Each spray sprinkler body manufactured on or after October 1, 2020, shall be marked, permanently and legibly, per the manufacturer's specification, to indicate the presence of an internal pressure regulator. The marking shall be on an accessible and conspicuous place on the spray sprinkler body and designed to be visible after installation.</p> <p>Adding "per the manufacturer's specification" to prevent other entities from defining where and how the markings should be placed.”</p>	<p>Comment acknowledged. No change.</p> <p>The Energy Commission is requiring a marking for internal pressure regulation to be placed in an area designed to be visible after installation to aid in inspections of landscape irrigation systems. The marking is necessary to enable anyone surveying an irrigation system, such as when performing landscape irrigation audits under California Code of Regulations, title 23, section 492.12, to quickly determine that the components of that system comply with applicable requirements.</p> <p>Adding "per manufacturer's specification" does not further the intent of the regulatory language, which is to require the appliance to be marked permanently and legibly, irrespective of what an individual manufacturer’s specification concerning that may or may not be. Adding the proposed language may imply that each manufacturer can subjectively determine what <i>permanently and legibly</i> means to them, removing the Energy Commission’s authority to independently evaluate objectively whether something is in fact marked permanently and legibly. This is clearly contrary to the intent of the regulation.</p>
28	B1	Ray Lamovec IrriGreen	<p>“Spray sprinkler bodies, are based on decades-old mechanical technology, where multiple heads are installed all along the edges of a zone and spray water inward, depending on overlapping arcs to completely cover a zone, making angles and curves very difficult to cover properly.</p> <p>These required overlapping arcs waste water because of the 75/25 paradigm: 75% of every zone receives too much water to ensure the remaining 25% gets enough water.</p> <p>In addition to overlapping, 10-15% more water is commonly wasted due to over spray outside the zone shape, landing on sidewalks and buildings. This inefficiency wastes up to 100,000 gallons of water, or more, per home, every year.”</p>	<p>Comment acknowledged. No change.</p> <p>Landscape irrigation system layout are outside the scope of the proposed regulation.</p> <p>Overlapping spray patterns can only be addressed through examining landscape irrigation system layout; not by establishing standards on individual emitters. Landscape irrigation system layout requirements are established through the California Department of Water Resources Model Water Landscape Ordinance. The Energy Commission’s authority to regulate these appliances does not extend to the layout of landscape irrigation systems. The appliance regulations apply at time of sale of the device and are not installation requirements, which is why layout or design is not within Energy Commission’s authority.</p> <p>Spraying outside the intended irrigation zone is partially addressed through the pressure regulation standard, which will control the outlet flow rate through pressure regulation, thereby decreasing the amount of overspray that would otherwise occur.</p>

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
28	B2 B3	Ray LamoveclrriG reen	“Digital sprinkler heads use software stops this waste by literally "printing" water, evenly, in the exact shape of any lawn, eliminating the 75% over watering that occurs with all of today's mechanical sprinkler systems.This system has been tested by the Center for Irrigation Technology (CIT) at Fresno State, and there is an attachment that summarizes how digital heads use 40-50% less water.”	<p>Comment acknowledged. No change.</p> <p>The Energy Commission decided to limit the scope of this rulemaking to spray sprinkler bodies. Digital sprinkler heads as illustrated in the comment do not meet the definition of a spray sprinkler body and therefore are outside the scope of the regulation. After considering all the information available at the time the rulemaking began, the Energy Commission chose not to include rotating sprinkler bodies in the scope of the regulation. Rotating sprinkler bodies are paired with nozzles that project a stream of water that is less susceptible to high supply water pressures. In addition the Commission reviewed the evidence presented for digital sprinkler heads and did not find information to support the cost effectiveness of this device. Missing information included quantity of water saved per sprinkler head per year, design life, and retail cost to the consumer.</p> <p>The Energy Commission may consider establishing test procedures and efficiency standards for rotating sprinkler bodies at a future time, as these are not federally covered products and may be an opportunity for additional energy savings.</p>
32	C1 C2	Stephanie Tanner US Environmental Protection Agency WaterSense Program	General comment of support.	<p>Comment acknowledged. General comment of support. No response required.</p> <p>The Energy Commission supports the harmonization between the US EPA WaterSense spray sprinkler body specification and the proposed standards to reduce the compliance cost to manufacturers and increase recognition by consumers.</p>
36	D1	Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities	General comment of support.	Comment acknowledged. General comment of support. No response required.

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
36	D2	Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities	<p>“The Statewide CASE Team recommends a minor clarifying revision to the definition of “spray sprinkler” in Section 1602(y)(1):</p> <p><u>“Spray sprinkler” means a device used to irrigate landscape that:</u></p> <p><u>(1) consists of a spray sprinkler body and a nozzle or orifice, and</u></p> <p><u>(2) discharges water through the air at a minimum flow rate of 0.5 gallons per minute when operated at an inlet pressure of 30 pounds per square inch or more; and when used with a full-circle pattern nozzle with the largest area of coverage available for the nozzle series using a full circle pattern.”</u></p>	<p>Comment acknowledged. No change.</p> <p>The Commission-proposed definition and the commenter's proposed modification are equivalent in meaning. The proposed change does not provide further clarification.</p>
37	D3	Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities	<p>“The Statewide CASE Team suggests considering a requirement for more representative sampling based on the requirements in the Irrigation Association Smart Water Application Technologies™ (SWAT) Pressure Regulating Spray Head Sprinklers Testing Protocol Version 3.0. This protocol requires that spray sprinkler body test samples be chosen at random from <i>three lots with different manufacturer date codes</i>. Adding this provision would provide more assurance that the samples are representative even if some variations occur between manufacturing lines or a given manufacturing line over time. Although representative sampling is not yet required by the WaterSense® program, it is fully compatible with the WaterSense® test method that the Energy Commission has proposed adopting. Similar revisions are also under consideration for updates to the ASABE/ICC 802 Standard.”</p>	<p>Comment acknowledged. No change.</p> <p>The proposed change would require manufacturers to test spray sprinkler bodies with more samples than is required by the US EPA WaterSense test method. The Energy Commission determined that it was important to stay consistent with the WaterSense requirements to minimize the effort required to comply with these regulations in addition to obtaining WaterSense certification, and that the method proposed added no additional water savings or cost effectiveness for consumers. .</p>

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
37	D4 D5	Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities	<p>“In the proposed regulatory language Section 1605.3(y)(1)(A), the term “selected samples” is used in the descriptions of “Maximum flow rate at any tested pressure level,” “Average flow rate across all tested pressures,” and “Minimum outlet pressure.” If this term is used, the Statewide CASE Team recommends adding a definition for this term to clarify what is meant by “selected samples.” We recommend clarifying that the “selected samples” are the test batch of five spray sprinkler bodies, selected in accordance to Section 1604(y)(1)(A) (i.e., they are not a selection of samples from the test batch of five spray sprinkler bodies, but rather they include all five sprinklers in the test batch).”</p>	<p>Comment acknowledged. No change.</p> <p>The Commission proposal defines what samples must be tested in the proposed language. Per section 1604 (y)(1)(A) "The test method for a spray sprinkler body is Appendix B of the WaterSense® Specification for Spray Sprinkler Bodies Version 1.0, September 21, 2017. For certification, compliance, and enforcement purposes, the sampling provisions in Appendix B of the WaterSense® Specification for Spray Sprinkler Bodies Version 1.0, September 21, 2017 shall be used."</p> <p>Read in context, the regulatory language makes clear that <i>selected samples</i> refers to those samples selected to perform the required testing in accordance with the test requirements. No additional explanation in the express terms is required.</p>
37	D6	Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities	<p>“Additionally, the Statewide CASE Team suggests the use of the term “percent change” instead of “percent difference” to quantify the change in flow rate from the initial calibration flow rate to the measured maximum flow rate and from the initial calibration flow rate to the average flow rate across all tested pressures. The term “percent difference” is commonly used to describe a difference of values divided by the average of the values. The term “percent change” could better represent the equation in the draft regulatory language, which aims to quantify the percentage of a value greater than or less than the initial calibration value.”</p>	<p>Comment acknowledged. No change.</p> <p>The Commission's proposed language copies the language of the US EPA WaterSense Spray Sprinkler Body Specification Version 1.0 exactly to provide clarity that the Commission's proposed mandatory standard is identical to the US EPA WaterSense's voluntary standard. Deviating from the terms used in WaterSense would create confusion as to whether the regulations intend a different interpretation. The Energy Commission believes that the terms proposed in the express terms, and used by WaterSense, are clear and present no potential ambiguity to regulatees.</p>

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
37	D7	Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities	<p>“The proposed regulatory language could be revised for clarity in some areas to facilitate reader understanding. For example, for “Maximum flow rate at any tested pressure level” the formula in the proposed regulation dictates that users are to calculate the percent change between the flow rate at the initial calibration pressure and the maximum flow rate at any pressure for each sample, and then they should take an average of these percent changes across all tested samples, which shall not exceed ± 12.0 percent. The following suggested change to the proposed regulatory language explains this process more clearly. Similar changes could be made to the language in Table X – Data Submittal Requirements in Section 1606.</p> <p><u>1. Maximum flow rate at any tested pressure level. The average across all tested samples of the percent difference change between the initial calibration flow rate for a sample, as determined by the test method in section 1604(y)(1)(A), and the maximum flow rate for a sample at any tested pressure level, averaged for the selected samples at the test pressure levels where the maximum flow rate occurred, shall not exceed ± 12.0 percent.”</u></p>	<p>Comment acknowledged. No change.</p> <p>The Commission's proposed language copies the language of the US EPA WaterSense Spray Sprinkler Body Specification Version 1.0 exactly to provide clarity that the Commission's proposed mandatory standard is identical to the US EPA WaterSense's voluntary standard. Deviating from the terms used in WaterSense would create confusion as to whether the regulations intend a different interpretation. The WaterSense standard has been in place for several years and the regulated community is already familiar with the test method. The Energy Commission believes that the terms proposed in the express terms, and used by WaterSense, are clear and present no potential ambiguity to the regulated community.</p> <p>Specifically, with regard to the Maximum flow rate example provided, the commenter does not consider the whole of section 1605.3 (y)(1)(A)1. that includes specific instructions as to the mathematical order of operations to determine the difference between maximum flow rate and initial calibration flow rate per each sample and performing the average of the differences of the selected samples. When the instructions are read alongside the mathematical equation, there is no potential for ambiguity or confusion. The proposed change by the commenter duplicates proposed language and does not clarify the calculation method.</p>

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
38	D8	Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities	<p>“Similarly, according to the formula given for average flow rate across all tested pressures, for each sample tested, readers should calculate the percent change between the average flow rate across all tested pressures and the flow rate at the initial calibration pressure. Then, they should take an overall average of these percentage changes across all samples, which shall not exceed ± 10.0 percent. The following suggested change explains this process more clearly. Similar changes could be made to the language in Table X – Data Submittal Requirements in Section 1606.</p> <p><u>2. Average flow rate across all tested pressures. The average across all tested samples of the percent difference change between the initial calibration flow rate for a sample, as determined by the test method in section 1604(y)(1)(A), and the average flow rate across all tested pressure levels for a sample at each tested pressure level, averaged across all pressure levels and all selected samples, shall not exceed ± 10.0 percent.”</u></p>	<p>Comment acknowledged. No change.</p> <p>The Commission's proposed language copies the language of the US EPA WaterSense Spray Sprinkler Body Specification Version 1.0 exactly to provide clarity that the Commission's proposed mandatory standard is identical to the US EPA WaterSense's voluntary standard. Deviating from the terms used in WaterSense would create confusion as to whether the regulations intend a different interpretation. The WaterSense standard has been in place for several year and the regulated community is already familiar with the test method. The Energy Commission believes that the terms proposed in the express terms, and used by WaterSense, are clear and present no potential ambiguity to the regulated community.</p> <p>Specifically, with regard to the average flow rate example provided, the commenter does not consider the whole of section 1605.3 (y)(1)(A)2. that includes specific instructions as to the mathematical order of operations to determine the difference between average flow rate and initial calibration flow rate per each sample and performing the average of the differences of the selected samples. When the instructions are read alongside the mathematical equation, there is no potential for ambiguity or confusion. The proposed change by the commenter duplicates proposed language and does not clarify the calculation method.</p>

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
38	D9	Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities	<p>“For the minimum outlet pressure, we suggest the following minor addition to clarify the given formula.</p> <p><u>3. Minimum outlet pressure. The average outlet pressure at the initial calibration point, as determined by the test method in section 1604(y)(1)(A), of the selected samples shall not be less than two-thirds of the regulation pressure.</u></p> <p><u>The average outlet pressure of the selected samples shall be calculated per the following equation:”</u></p>	<p>Comment acknowledged. No change.</p> <p>The Commission's proposed language copies the language of the US EPA WaterSense Spray Sprinkler Body Specification Version 1.0 exactly to provide clarity that the Commission's proposed mandatory standard is identical to the US EPA WaterSense's voluntary standard.</p> <p>The addition of “outlet pressure” does not provide clarity because section 1605.3 (y)(1)(A)3. only refers to outlet pressure as the measured quantity and therefore there in no other reasonable interpretation of “average” that addition of “outlet pressure” would exclude.</p>
38	D10	Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities	<p>“The Statewide CASE Team supports the proposed product marking requirement in Section 1607. Our understanding is that the proposed requirement is consistent with current standard industry practice.”</p>	<p>Comment acknowledged. General comment of support. No response required.</p>
40	E1 E2	Brent Mecham Irrigation Association	<p>General comment of support.</p>	<p>Comment acknowledged. General comment of support. No response required.</p>

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
40	E3	Brent Mecham Irrigation Association	<p>“Because of how the EPA WaterSense program functions with certifying organizations to monitor the testing of products, evaluating their performance and monitoring the products in the marketplace for compliance, the IA on behalf of its member companies feels that states that add their own additional requirements makes the testing process confusing for the manufacturers and adds additional costs for testing and compliance. A preferred approach is to consider what Colorado has done in House Bill 19-1231 by simply requiring that spray sprinkler bodies comply with Water Sense certification by January 1, 2020 with recently passed and signed legislation. http://leg.colorado.gov/sites/default/files/2019a_1231_signed.pdf</p> <p>While we recognize that each state is unique in their needs and regulatory process, it is an example of how using a national program without complicating it with special additional requirements will serve the ultimate goal of improving resource efficiency. We encourage the CEC to follow this path.”</p>	<p>Comment acknowledged. No change.</p> <p>The Energy Commission is not proposing to add any additional substantive requirements to the WaterSense specifications. The provisions proposed replicate those exact requirements while also ensuring the Energy Commission can individually monitor and enforce compliance, as required, and ensure the standard in California remains firm in the event the federal program is defunded or weakened.</p>
64	F1 F2	Ron Wolfarth Rain Bird Corporation	General comment of support.	Comment acknowledged. No change is necessary.

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
64	F3	Ron Wolfarth Rain Bird Corporation	<p>“In addition to its support, Rain Bird respectfully requests changes to the proposed regulatory language, changes which will ensure it will not confuse consumers or place undue burden on industry. Rain Bird strongly suggests and highly prefers CEC revert back to the January proposed language regarding testing and reporting of results and additionally require reporting only regulation pressure and maximum operation pressure. Perhaps this change would not cause a delay in the regulatory process since we presume it has already been reviewed and vetted by CEC staff.”</p>	<p>Comment acknowledged. No change.</p> <p>The Energy Commission initially explored the possibility of simply requiring WaterSense certification, but for several reasons determined instead to adopt the WaterSense specifications themselves in these regulations. As discussed above, these reasons include ensuring the Energy Commission is able to independently confirm that an entity has complied with the requirements and enforce any such non-compliance, and ensuring the standard remains firm even if the federal program is defunded or changes are made to weaken it.</p> <p>The Energy Commission determined that it was important to require the reporting of more than just maximum operating pressure and regulation pressure because this information will ensure the Energy Commission can independently verify products certified to the database meet the performance standard.</p>

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
67	F4	Ron Wolfarth Rain Bird Corporation	<p>“Rain Bird believes the requirement to declare WaterSense certification and report only the regulation pressure and maximum operating pressure provides the following consumer and industry benefits:</p> <p>1. Consumer confusion would be greatly reduced or eliminated regarding the quality of performance of spray sprinkler bodies. ...</p>	<p>Comment acknowledged. No change.</p>
	F5		<p>The WaterSense program requires third-party testing and verification of spray sprinkler body pressure regulation performance using the criteria in the proposed regulatory language which Rain Bird recommends for elimination. Including it in the proposed regulatory language is redundant if CEC agrees to require WaterSense certification</p>	<p>As discussed above, the Energy Commission determined it was important to adopt the WaterSense specifications instead of just requiring certification for a number of reasons. Staff does not believe this approach will lead to consumer confusion. The reporting required isn’t intended to be used by consumers to compare products and the numbers will not be placed on the products themselves, or their packaging. The reporting is required to confirm that the product being reported does in fact comply with the standard. Myriad appliances require similar reporting in the database and customer confusion surrounding such reporting has not been an issue.</p>
	F6		<p>The WaterSense program, through expert third party testers, analyzes the data and determines whether or not the tested product meets the WaterSense criteria. WaterSense then authorizes the use of the WaterSense label for products which meet those criteria. Consumers get a simple, clear indication of the performance of the product and are not confused by arcane information that is difficult for them to interpret.</p>	<p>Because the Energy Commission has decided to adopt the WaterSense specifications themselves and not simply require certification, the identified language is not redundant, as any portion excluded would otherwise not be part of the mandatory requirements.</p>
	F7		<p>Providing only regulation pressure and maximum operating pressure as Rain Bird recommends provides information easy for consumers to use and understand. Reporting the balance of information in the current proposed regulatory language will confuse and perhaps mislead consumers.”</p>	

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
67	F8	Ron Wolfarth Rain Bird Corporation	<p>“The current proposed regulatory language requires initial reporting and maintenance of test data for every stock keeping unit (SKU) to be sold. The testing burden of each SKU to be sold is significantly higher compared to the testing required to qualify for the WaterSense label. The staff time and operating expense required to provide and maintain this amount of data is burdensome to manufacturers, represents a significant increase over the requirements in the January proposed regulatory language and provides little or no consumer benefit.”</p>	<p>Comment acknowledged. No change.</p> <p>The regulations allow the manufacturer to conduct one test on a “basic” model to represent a range of models and use the test results to represent other models that meet the basic model requirements. (Cal. Code Reg., tit. 20, section 1602)</p> <p>A manufacturer may also certify multiple models through one entry to Commission database if the model numbers meet the requirements of 20 CCR § 1606 (a)(1)(C). In filing any statement, the manufacturer may use asterisks as a substitute for letters, numbers, blanks, or other characters in the model number, provided that an asterisk (i) shall be used only for a part of the model number that does not indicate energy consumption, energy efficiency, water consumption, or water efficiency, or a design or feature affecting such efficiency or consumption.</p> <p>Thus, the regulations will not necessarily require a manufacturer to test every stock keeping unit sold.</p>
67	F9	Ron Wolfarth Rain Bird Corporation	<p>“Requiring WaterSense compliance only has the additional industry benefit of setting a precedent for other states which may follow California’s leadership in this area. This may tend to harmonize state by state requirements and prevent a national patchwork of individual state requirements. If California sets its own testing/reporting requirements, other states may do the same. Individual state requirements that are all different to some degree will collectively result in an onerous burden on industry. California’s leadership in this area is important and influential.”</p>	<p>Comment acknowledged. No change.</p> <p>The Commission has proposed a standard that aligns with the US EPA WaterSense Specification for Spray Sprinkler Bodies that is already required in four states and also in states with pending legislation. As discussed above, the Energy Commission determined it was important to adopt the WaterSense specifications instead of just requiring certification for a number of reasons enumerated above, including the ability to independently verify and enforce compliance and ensure the standard in California remains firm in case the federal program is defunded or weakened. The regulations are the same in substance as WaterSense and the Energy Commission has determined that compliance with these requirements is reasonable and not onerous.</p>
67	F10	Ron Wolfarth Rain Bird Corporation	<p>“Rain Bird believes that the consumer is well served by reliance on the WaterSense program as proposed in the January proposed regulatory language and reporting of regulation pressure and maximum operating pressure. It also relieves industry of low value, unnecessary burden.”</p>	<p>Comment acknowledged. No change.</p> <p>This comment summarizes previous comments. Please see response to comments F1-F9.</p>

Comments on Proposed Spray Sprinkler Bodies Regulations
Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1609, California Code of Regulations
Comments Received at the Public Hearing
June 18, 2019

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
92	G1 G2	Mary Anderson Pacific Gas and Electric on behalf of the CA IOU	General comment of support.	Comment acknowledged. General comment of support. No response required.
93	H1- H3	Edward Osann Natural Resources Defense Council	General comment of support.	Comment acknowledged. General comment of support. No response required.
94	H4	Edward Osann Natural Resources Defense Council	“We support the recommendations of the CASE Team for refinements to the 45-day language with the same proviso, that they can be accomplished without significant delay. In particular, section 2.3 of the utility comments regarding the sampling protocol, we believe that ensuring that test samples are selected from different production batches, which is to say date code lots, helps focus on the effectiveness of manufacturer’s Q.A./Q.C. practices. ...And a sampling protocol that incorporates and ensures that test samples are drawn from different production batches will better address issues of quality control.”	Comment acknowledged. No change. The proposed change would require manufacturers to test spray sprinkler bodies with more samples than is required by the US EPA WaterSense test method. The Energy Commission determined that it was important to stay consistent with the WaterSense requirements to minimize the effort required to comply with these regulations in addition to obtaining WaterSense certification. The proposed change is not a part of the WaterSense specification and adds no additional value to the standard. The commenter has not provided evidence that there is a significant variation between manufacturing lots that presents a problem that these regulations need to resolve.

Pg	No.	Commenter Name and Organization	Comments or Suggested Revisions	Response
95	H5	Edward Osann Natural Resources Defense Council	The commenter requests that the Energy Commission consider changes from the Codes and Standards Enhancement (CASE) Initiative California Investor Owned Utilities comment D6 regarding changes of wording from percent difference to percent change to better reflect industry usage.	<p>Comment acknowledged. No change.</p> <p>The Commission's proposed language copies the language of the US EPA WaterSense Spray Sprinkler Body Specification Version 1.0 exactly to provide clarity that the Commission's proposed mandatory standard is identical to the US EPA WaterSense's voluntary standard. Deviating from the terms used in WaterSense would create confusion as to whether the regulations intend a different interpretation. The Energy Commission believes that the terms proposed in the express terms, and used by WaterSense, are clear and present no potential ambiguity to the regulated community.</p>
95	H6	Edward Osann Natural Resources Defense Council	“We urge the Commission to reject several industry recommendations that would depart from standard CEC reporting requirements and cede undo deference to the workings of the federal WaterSense Program going forward, in particular, proposals that would substitute evidence of WaterSense certification for reporting of test results to the CEC reporting database. We find the claims of undue burden and potential consumer confusion to be unconvincing. If testing is done the results can and should be submitted to the CEC database. The database is a valuable resource for California utilities and consumers and, indeed, for other states.”	<p>Comment acknowledged. No change.</p> <p>The regulations take the recommended approach.</p>

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96	H7	Edward Osann Natural Resources Defense Council	<p>“Any proposals that would rely on prospective actions to be taken by or through the EPA WaterSense Program would be of concern. Some commenters have offered support for the January staff draft. As we noted in public comments at the time, an approach that relies on prospective actions of EPA and/or its contractors or performance certifying bodies is vulnerable to the vagaries of the federal budget process.</p> <p>Authorizing legislation for the WaterSense Program in 2018 was a welcome and long-overdue step, but it does not ensure that an administration will not zero-fund the program, as the current administration has done, nor that congress will be able to provide continuous and steady funding, as was the case as recently as last January.”</p>	<p>Comment acknowledged. No change.</p> <p>The regulations adopt the WaterSense specifications and do not rely on certification for compliance for the reasons stated, among others.</p>

DOCKETED	
Docket Number:	19-AAER-01
Project Title:	Spray Sprinkler Bodies
TN #:	228520
Document Title:	Hunter Industries Comments 1606 Filing by Manufacturers
Description:	N/A
Filer:	System
Organization:	Hunter Industries
Submitter Role:	Public
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Docketed Date:	6/4/2019

Comment Received From: Hunter Industries
Submitted On: 6/4/2019
Docket Number: 19-AAER-01

1606 Filing by Manufacturers

Return Section 1606 to the proposed regulatory language from 01-18-19:

A1

(3) Testing and Performance Information.

(A) A statement that the appliance has been tested in accordance with all applicable requirements of sections 1603 and 1604 of this Article. If section 1604 of this Article provides more than one test method that may be used, the manufacturer shall identify which method was used.

EXCEPTION 1 to Section 1606 (a)(3)(A) of this Article:

For spray sprinkler bodies, in lieu of the statement required in section 1606(a)(3)(A) of this Article, a statement that the appliance is certified to the U.S. Environmental Protection Agency as conforming to the Agency's WaterSense® Specification for Spray Sprinkler Bodies.

EXCEPTION 2 to Section 1606 (a)(3)(A) of this Article:

For spray sprinklers, in lieu of the statement required in section 1606(a)(3)(A) of this Article, a statement that the appliance contains a spray sprinkler body that is certified to the U.S. Environmental Protection Agency as conforming to the Agency's WaterSense® Specification for Spray Sprinkler Bodies.

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{skipping (a)(1)-(3)â€|}

Table X

Data Submittal Requirements

Appliance: All Appliances

Required Information: * Manufacturer's Name; * Brand Name; * Model Number; Date model to be displayed; Regulatory Status

Permissible Answers: Federally-regulated consumer product, federally-regulated commercial and industrial equipment, non-federally-regulated

{skipping sections A-W of Table X} â€|

Appliance: Reserved; Landscape Irrigation Equipment

Required Information: Landscape Irrigation Equipment Type; Spray sprinkler body certified to the U.S. Environmental Protection Agency as conforming to the Agency's WaterSense® Specification for Spray Sprinkler Bodies; Model number of spray sprinkler body contained within the spray sprinkler (spray sprinkler only)

Permissible Answers: Spray sprinkler body, spray sprinkler; True, false

Additional submitted attachment is included below.

A2

Proposed Regulatory Language

The proposed changes to the Title 20 standards are provided below. Changes to the 2018 standards are marked with underlining (new language) and ~~striketroughs~~ (deletions). Three dots or “...” represents the substance of the existing regulations that will remain unchanged between the sections containing proposed language changes.

Section 1601. Scope

...

~~(x) Reserved.~~

(y) Landscape irrigation equipment.

(1) Spray sprinkler bodies and spray sprinklers.

...

Section 1602. Definitions

...

~~(x) Reserved.~~

(y) Landscape Irrigation Equipment.

(1) Spray Sprinkler Bodies and Spray Sprinklers.

“Landscape” means any areas that are planted or installed and intended to receive irrigation including, turfgrass, ground covers, shrubs, trees, flowers, and similar plant materials. Landscape does not include agricultural crops grown and harvested for monetary return.

“Nozzle” of a spray sprinkler means the discharge opening or orifice of a spray sprinkler used to control the volume of discharge, distribution pattern, and droplet size.

“Orifice” of a spray sprinkler means the emission point from a nozzle into the atmosphere.

“Spray sprinkler” means a device used to irrigate landscape that:

(1) consists of a spray sprinkler body and a nozzle, and

(2) discharges water through the air at a flow rate greater than 0.5 gallons per minute

when operated at an inlet pressure of 30 pounds per square inch or more using a nozzle that has a full circle pattern and has the largest area of coverage available for that nozzle series.

“Spray sprinkler body” means a sprinkler body that does not contain components to drive the rotation of the nozzle or orifice during operation and lacks an integral control valve.

“Sprinkler body” means the exterior case or shell of a sprinkler incorporating a means of connection to the piping system, designed to convey water to a nozzle or orifice.

1 **Section 1602.1 Rule of Construction**

2 **(No Change)**

3 **Section 1603. Testing: All Appliances**

4 **(No Change)**

5 **Section 1604. Test Methods for Specific Appliances.**

6 ...

7 (x) Reserved.

8 (y) Landscape Irrigation Equipment.

9 (1) Spray Sprinkler Bodies and Spray Sprinklers.

10 (A) There is no test method for a spray sprinkler or spray sprinkler body.

11 ...

12 **Section 1605. Energy Performance, Energy Design, Water**
13 **Performance, and Water Design Standards: In General.**

14 **(No Change)**

15 **Section 1605.1. Federal and State Standards for Federally**
16 **Regulated Appliances.**

17 ...

18 (x) Reserved.

19 (y) Landscape Irrigation Equipment.

20 See section 1605.3(y) for water efficiency standards for landscape irrigation equipment.

21 ...

22 **Section 1605.2. State Standards for Federally Regulated**
23 **Appliances.**

24 ...

25 (x) Reserved.

26 (y) Landscape Irrigation Equipment.

27 See section 1605.3(y) for water efficiency standards for landscape irrigation equipment.

28 ...

1 **Section 1605.3. State Standards for Non-Federally Regulated**
2 **Appliances.**

3 ...

4 (x) Reserved.

5 (y) Landscape Irrigation Equipment.

6 (1) Spray Sprinkler Bodies and Spray Sprinklers.

7 (A) A spray sprinkler body manufactured on or after July 1, 2020, shall be certified to the U.S.
8 Environmental Protection Agency as conforming to the Agency’s WaterSense® Specification for Spray
9 Sprinkler Bodies, and shall maintain such certification.

10 (B) A spray sprinkler manufactured on or after July 1, 2020, shall contain a spray sprinkler body certified
11 to the U.S. Environmental Protection Agency as conforming to the Agency’s WaterSense® Specification
12 for Spray Sprinkler Bodies, and shall maintain such certification.

13 **Section 1606. Filing by Manufacturers; Listing of Appliances**
14 **in Database.**

15 (a) Filing of Statements.

16 ...

17 (3) Testing and Performance Information.

18 (A) A statement that the appliance has been tested in accordance with all applicable requirements of
19 sections 1603 and 1604 of this Article. If section 1604 of this Article provides more than one test method
20 that may be used, the manufacturer shall identify which method was used.

21 EXCEPTION 1 to Section 1606(a)(3)(A) of this Article:

22 For spray sprinkler bodies, in lieu of the statement required in section 1606(a)(3)(A) of this Article, a
23 statement that the appliance is certified to the U.S. Environmental Protection Agency as conforming to
24 the Agency’s WaterSense® Specification for Spray Sprinkler Bodies.

25 EXCEPTION 2 to Section 1606(a)(3)(A) of this Article:

26 For spray sprinklers, in lieu of the statement required in section 1606(a)(3)(A) of this Article, a statement
27 that the appliance contains a spray sprinkler body that is certified to the U.S. Environmental Protection
28 Agency as conforming to the Agency’s WaterSense® Specification for Spray Sprinkler Bodies.

29 ...

30 ...
31 {skipping (a)(1)-(3)...}

1
2

Table X
Data Submittal Requirements

	Appliance	Required Information	Permissible Answers
	All Appliances	* Manufacturer's Name	
		* Brand Name	
		* Model Number	
		Date model to be displayed	
		Regulatory Status	Federally-regulated consumer product, federally-regulated commercial and industrial equipment, non-federally-regulated

3
4

{...skipping sections A-W of Table X} ...

	Appliance	Required Information	Permissible Answers
X	Reserved		
Y	Landscape Irrigation Equipment	Landscape Irrigation Equipment Type	Spray sprinkler body, spray sprinkler
		Spray sprinkler body certified to the U.S. Environmental Protection Agency as conforming to the Agency's WaterSense® Specification for Spray Sprinkler Bodies	True, false
		Model number of spray sprinkler body contained within the spray sprinkler (spray sprinkler only)	

5 ...

6 **Section 1607 Marking of Appliances.**

7 ...

8 (c) Exceptions to Section 1607(b).

9 ...

10 (2) For lamps, spray sprinkler bodies, and spray sprinklers, the information required by Section 1607(b)
11 shall be permanently, legibly, and conspicuously displayed on an accessible place on each unit, on the

1 unit's packaging, or, where the unit is contained in a group of several units in a single package, on the
2 packaging of the group.

3 ...

4 **Section 1608. Compliance, Enforcement, and General**
5 **Administrative Matters**

6 **(No Change)**

7 **Section 1609. Administrative Civil Penalties**

8 **(No Change)**

DOCKETED	
Docket Number:	19-AAER-01
Project Title:	Spray Sprinkler Bodies
TN #:	228521
Document Title:	Hunter Industries Comments 1607 Marking of Appliances
Description:	N/A
Filer:	System
Organization:	Hunter Industries
Submitter Role:	Public
Submission Date:	6/4/2019 9:03:08 AM
Docketed Date:	6/4/2019

Comment Received From: Hunter Industries
Submitted On: 6/4/2019
Docket Number: 19-AAER-01

1607 Marking of Appliances

(A) Spray Sprinkler Bodies. Each spray sprinkler body manufactured on or after October 1, 2020, shall be marked, permanently and legibly, per the manufacturer's specification, to indicate the presence of an internal pressure regulator. The marking shall be on an accessible and conspicuous place on the spray sprinkler body and designed to be visible after installation.

A3

Adding "per the manufacturer's specification" to prevent other entities from defining where and how the markings should be placed.

DOCKETED	
Docket Number:	19-AAER-01
Project Title:	Spray Sprinkler Bodies
TN #:	228727
Document Title:	IrriGreen Comments - Digital Sprinkler Head Technology uses 40-50% Less Water than Spray Sprinkler Bodies by printing water
Description:	IrriGreen Comments - Digital Sprinkler Head Technology uses 40-50% Less Water than Spray Sprinkler Bodies by printing water in exact shape of lawns
Filer:	System
Organization:	Ray Lamovec/IrriGreen
Submitter Role:	Public
Submission Date:	6/10/2019 3:47:50 PM
Docketed Date:	6/10/2019

*Comment Received From: Ray Lamovec
Submitted On: 6/10/2019
Docket Number: 19-AAER-01*

Digital Sprinkler Head Technology uses 40-50% Less Water than Spray Sprinkler Bodies by "printing" water in exact shape of lawns

Spray sprinkler bodies, are based on decades-old mechanical technology, where multiple heads are installed all along the edges of a zone and spray water inward, depending on overlapping arcs to completely cover a zone, making angles and curves very difficult to cover properly.

B1

These required overlapping arcs waste water because of the "75/25" paradigm: 75% of every zone receives too much water to ensure the remaining 25% gets enough water (illustrated on CIT slide in the "IrriGreen Saves Water Summary" pdf attached

In addition to overlapping, 10-15% more water is commonly wasted due to over spray outside the zone shape, landing on sidewalks and buildings.

This inefficiency wastes up to 100,000 gallons of water, or more, per home, every year.

Digital sprinkler heads use software stops this waste by literally "printing" water, evenly, in the exact shape of any lawn, eliminating the 75% over watering that occurs with all of today's mechanical sprinkler systems.

B2

This system has been tested by the Center for Irrigation Technology (CIT) at Fresno State, and there is an attachment that summarizes how digital heads use 40-50% less water.

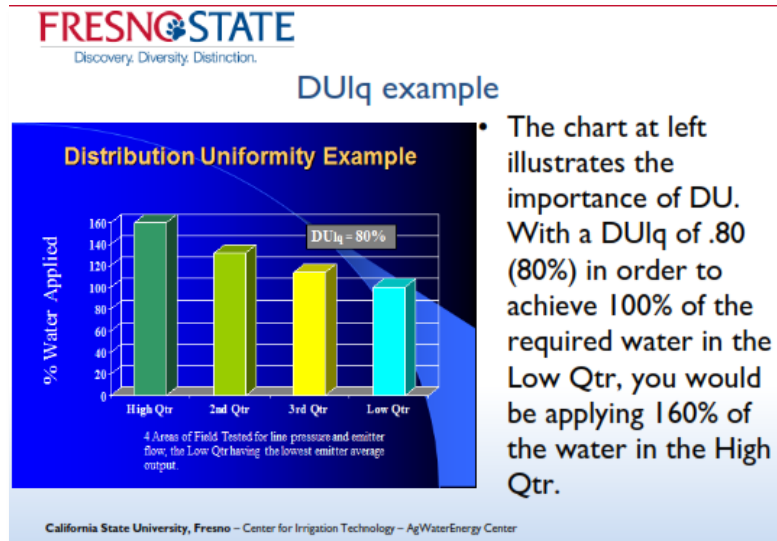
B3

Additional submitted attachment is included below.



IrriGreen CIT Test Shows 40% Water Savings

Today’s irrigation systems are based on decades-old mechanical technology where multiple heads are installed on along the edges of a zone and spray water inward. These systems are dependent on overlapping arcs to completely cover a zone, making angles and curves very difficult to cover properly.



Their overlapping arcs waste water because of the “75/25” paradigm: **75% of every zone receives too much water to ensure the remaining 25% gets enough water**, as illustrated by this Center for Irrigation Technology slide.

In addition to overlapping, **10-15% more water is commonly wasted due to overspray** outside the zone shape, landing on sidewalks and buildings.

The IrriGreen Genius Sprinkler was tested by the Center for Irrigation Technology (CIT), Fresno State, in 2016 against mechanical sprinklers. CIT designed rectangular, square and circular shaped test plots and installed best-in-class mechanical sprinklers for each test using 6-9 mechanical sprinklers versus 1 IrriGreen sprinkler. CIT measured soil moisture (SMS) and catch can volume before and after each watering event, as well as the gallons used for each test.

The IrriGreen system used 42.2% less water on a 30’ x 60’ rectangle.

For the 30’ x 60’ rectangular test plot, go to the CIT Study, Table 1, columns CIT-2 and IRRG-2. 6 Hunter I-20 heads used 492 gallons to achieve a 11.4% increase in soil moisture. A single IrriGreen head used 284 gallons to achieve a 11.0% increase in soil moisture. Application efficiency per the CIT report was 70% for Hunter and 65% for IrriGreen as measured with SMS.

The IrriGreen system used 36.7% less water on a 30’ circle.

For the 30’ circle test plot, go to the CIT Study, Table1, rows CIT-6 and IRRG-6. 8 Hunter Pro Adjustable sprays used 240 gallons to achieve a 9.6% increase in soil moisture. A single IrriGreen head used 152 gallons to achieve a 9.6% increase in soil moisture. Application efficiency per CIT was 60% for Hunter and 60% for IrriGreen as measured with SMS.

Why SMS measurements are used: In 2014, Dr. Brian Horgan, turf grass specialist at the University of Minnesota, made this conclusion after comparing IrriGreen with mechanical sprinklers: “The Catch Can method is not a suitable assessment of the IrriGreen system’s wetting ability and uniformity.”

Note: There was an SMS probe failure during the 30’ x 30’ square test plot measurements as noted in the report.



How does IrriGreen save water?

IrriGreen multi-stream nozzle applies water evenly everywhere in any shape zone using software to follow the exact lawn shape (curves, angles, corners) and calculate the surface area every 0.8 degrees of rotation. Software digitally controls the rotational speed and valve opening to deliver an equal amount of precipitation everywhere within the zone shape. It operates very similarly to an inkjet printer, evenly “printing water” in any shape.

There are 14 different size/volume streams of water designed to delivering a uniform amount of water from the head to the edge of the zone. Smaller streams spray close to the head and stream sizes increase proportionally (with the surface area) as the distance from the head increases. Water movement in the soil fills in the small gaps between the streams, much like a like drip irrigation system depends on water soaking into the soil between the drip lines.

The IrriGreen system and software evenly applies 0.05 inches of water per rotation. Users select how many inches of water per watering event (in increments of 0.05”) and software calculates run times and inserts the time into the watering schedule. This precise application of water eliminates overwatering due to inaccurate calculation of application rate in mechanical systems.

In conclusion, IrriGreen eliminates water waste due to overwatering, overspray, and application rate inaccuracy by using software accuracy.

DOCKETED	
Docket Number:	19-AAER-01
Project Title:	Spray Sprinkler Bodies
TN #:	228731
Document Title:	USEPA Comments - WaterSense
Description:	N/A
Filer:	System
Organization:	Stephanie Tanner/U.S. Environmental Protection Agency (EPA)
Submitter Role:	Public Agency
Submission Date:	6/11/2019 12:37:13 PM
Docketed Date:	6/11/2019

Comment Received From: Stephanie Tanner
Submitted On: 6/11/2019
Docket Number: 19-AAER-01

USEPA WaterSense

The U.S. Environmental Protection Agency's WaterSense program reiterates its support of the proposed regulatory language in Section 1604 that requires spray sprinkler bodies to be tested according to the test method included in Appendix B of the WaterSense Specification for Spray Sprinkler Bodies, Version 1.0; and continues to support the requirement in Section 1605.3 that spray sprinkler bodies meet the performance criteria consistent with the criteria included in Section 2.0 of the WaterSense Specification for Spray Sprinkler Bodies, Version 1.0. The harmonization between CEC and WaterSense with respect to the test method and performance criteria will provide utilities and consumers with clear and consistent information, as product efficiency and performance will be easily comparable across states. Additionally, harmonization with respect to test method will ease the compliance cost and burden on manufacturers because they will be able to have products tested a single time to demonstrate compliance with the CEC regulation and/or the voluntary WaterSense specification.

C1

C2

DOCKETED	
Docket Number:	19-AAER-01
Project Title:	Spray Sprinkler Bodies
TN #:	228719
Document Title:	California IOUs Comment on Proposed Regulatory Language
Description:	N/A
Filer:	System
Organization:	California Investor Owned Utilities
Submitter Role:	Public
Submission Date:	6/7/2019 4:26:40 PM
Docketed Date:	6/7/2019

Comment Received From: California Investor Owned Utilities
Submitted On: 6/7/2019
Docket Number: 19-AAER-01

California IOUs Comment on Proposed Regulatory Language

Additional submitted attachment is included below.

Spray Sprinkler Bodies

Codes and Standards Enhancement (CASE) Initiative
For PY 2019: Title 20 Standards Development

Comments on Proposed Regulatory
Language
Spray Sprinkler Bodies
19-AAER-01

June 7, 2019

Prepared for:



PACIFIC GAS & ELECTRIC COMPANY



SOUTHERN CALIFORNIA
EDISON



SAN DIEGO GAS AND
ELECTRIC

Prepared by:

Daniela Urigwe and Ed Pike, ENERGY SOLUTIONS

This report was prepared by the California Statewide Investor-Owned Utilities Codes and Standards Program and funded by the California utility customers under the auspices of the California Public Utilities Commission.

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1. Purpose

The Codes and Standards Enhancement (CASE) initiative presents recommendations to support the California Energy Commission’s (Energy Commission) efforts to update California’s Appliance Efficiency Regulations (Title 20) to include new requirements or to upgrade existing requirements for various technologies. Three California Investor-Owned Utilities— Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE) – sponsored this effort (herein referred to as the Statewide CASE Team). The program goal is to prepare and submit proposals that will result in cost-effective enhancements to improve the energy and water efficiency of various products sold in California. This document describes the Statewide CASE Team’s comments on the Energy Commission’s proposed regulatory language for spray sprinkler bodies. In this document, the Energy Commission proposed language is indicated by single underline and the Statewide CASE Team’s recommended revisions to the Energy Commission proposal are marked by double underline for additions and ~~strikeout~~ for deletions.

2. Statewide CASE Team Comments

2.1 General Comments and Support of the Proposed Standard

The Statewide CASE Team strongly supports the Energy Commission’s proposed standard for spray sprinkler bodies. The standard would provide significant statewide water savings as well as utility bill cost savings to California consumers. The Statewide CASE Team agrees with the Energy Commission’s proposed approach of incorporating the United States Environmental Protection Agency WaterSense® spray sprinkler body test method by reference, adopting a performance level in harmony with Version 1.0 of the WaterSense® Specification for Spray Sprinkler Bodies, and adopting specific compliance requirements necessary for implementing a Title 20 Standard. We recommend considering the minor revisions for clarity listed below if they can be accomplished without further delay to the implementation of the proposed standard; otherwise, we recommend adopting the Energy Commission’s proposal without additional revisions.

D1

2.2 Comments on Proposed Definitions

The Statewide CASE Team recommends a minor clarifying revision to the definition of “spray sprinkler” in Section 1602(y)(1):

“Spray sprinkler” means a device used to irrigate landscape that:

- (1) consists of a spray sprinkler body and a nozzle or orifice, and
- (2) discharges water through the air at a minimum flow rate of 0.5 gallons per minute when operated at an inlet pressure of 30 pounds per square inch or more; and when used with a full-circle pattern nozzle with the largest area of coverage available for the nozzle series ~~using a full-circle pattern.~~

D2

2.3 Comments on Test Method for Spray Sprinkler Bodies

The Statewide CASE Team strongly supports the adoption of the WaterSense® test method for spray sprinkler bodies. The WaterSense® Specification for Spray Sprinkler Bodies Version 1.0 dictates that products shall be sampled and selected in accordance with the American Society of Agricultural and Biological Engineers/International Code Council Landscape Irrigation and Sprinkler and Emitter Standard

(ASABE/ICC 802-2014) Section 301.1.1, which states that a minimum of five samples, selected at random from a lot of at least 25 units, shall be tested individually.

The Statewide CASE Team suggests considering a requirement for more representative sampling based on the requirements in the Irrigation Association Smart Water Application Technologies™ (SWAT) Pressure Regulating Spray Head Sprinklers Testing Protocol Version 3.0. This protocol requires that spray sprinkler body test samples be chosen at random from *three lots with different manufacturer date codes*. Adding this provision would provide more assurance that the samples are representative even if some variations occur between manufacturing lines or a given manufacturing line over time. Although representative sampling is not yet required by the WaterSense® program, it is fully compatible with the WaterSense® test method that the Energy Commission has proposed adopting. Similar revisions are also under consideration for updates to the ASABE/ICC 802 Standard. A sample addition to Section 1604(y)(1)(A) is below:

D3

Nine sprinklers of each tested sprinkler model shall be selected from three lots with different manufacturer date codes. These devices shall be obtained as “off-the-shelf-purchases” from authorized irrigation distributors to create a test lot. One sprinkler shall be selected at random from each of the three manufacturer date code lots, with two additional sprinklers selected at random from the remaining manufacturer date code lots for a total test batch of five sprinklers of the same model subject to testing.

2.4 Comments on State Standards for Non-Federally-Regulated Appliances

In general, the Statewide CASE Team supports the Energy Commission’s effort to standardize regulatory language with the WaterSense® specification and test method with the goal of providing consistency for stakeholders. The following changes are suggested for clarity, but they are not meant to deviate from the process laid out in the WaterSense specification and test method.

D4

In the proposed regulatory language Section 1605.3(y)(1)(A), the term “selected samples” is used in the descriptions of “Maximum flow rate at any tested pressure level,” “Average flow rate across all tested pressures,” and “Minimum outlet pressure.” If this term is used, the Statewide CASE Team recommends adding a definition for this term to clarify what is meant by “selected samples.” We recommend clarifying that the “selected samples” are the test batch of five spray sprinkler bodies, selected in accordance to Section 1604(y)(1)(A) (i.e., they are not a selection of samples from the test batch of five spray sprinkler bodies, but rather they include all five sprinklers in the test batch).

D5

Additionally, the Statewide CASE Team suggests the use of the term “percent change” instead of “percent difference” to quantify the change in flow rate from the initial calibration flow rate to the measured maximum flow rate and from the initial calibration flow rate to the average flow rate across all tested pressures. The term “percent difference” is commonly used to describe a difference of values divided by the average of the values. The term “percent change” could better represent the equation in the draft regulatory language, which aims to quantify the percentage of a value greater than or less than the initial calibration value.¹

D6

The proposed regulatory language could be revised for clarity in some areas to facilitate reader understanding. For example, for “Maximum flow rate at any tested pressure level” the formula in the

D7

¹ Percent difference is often defined as (difference of values)/(average of values). Percent change would capture what is desired here, i.e., the percentage greater than the initial value. <https://www.mathsisfun.com/data/percentage-difference-vs-error.html>

proposed regulation dictates that users are to calculate the percent change between the flow rate at the initial calibration pressure and the maximum flow rate at any pressure for each sample, and then they should take an average of these percent changes across all tested samples, which shall not exceed ± 12.0 percent. The following suggested change to the proposed regulatory language explains this process more clearly. Similar changes could be made to the language in Table X – Data Submittal Requirements in Section 1606.

1. Maximum flow rate at any tested pressure level. The average across all tested samples of the percent difference change between the initial calibration flow rate for a sample, as determined by the test method in section 1604(y)(1)(A), and the maximum flow rate for a sample at any tested pressure level, averaged for the selected samples at the test pressure levels where the maximum flow rate occurred, shall not exceed ± 12.0 percent.

Similarly, according to the formula given for average flow rate across all tested pressures, for each sample tested, readers should calculate the percent change between the average flow rate across all tested pressures and the flow rate at the initial calibration pressure. Then, they should take an overall average of these percentage changes across all samples, which shall not exceed ± 10.0 percent. The following suggested change explains this process more clearly. Similar changes could be made to the language in Table X – Data Submittal Requirements in Section 1606.

D8

2. Average flow rate across all tested pressures. The average across all tested samples of the percent difference change between the initial calibration flow rate for a sample, as determined by the test method in section 1604(y)(1)(A), and the average flow rate across all tested pressure levels for a sample at each tested pressure level, averaged across all pressure levels and all selected samples, shall not exceed ± 10.0 percent.

For the minimum outlet pressure, we suggest the following minor addition to clarify the given formula.

3. Minimum outlet pressure. The average outlet pressure at the initial calibration point, as determined by the test method in section 1604(y)(1)(A), of the selected samples shall not be less than two-thirds of the regulation pressure.

D9

The average outlet pressure of the selected samples shall be calculated per the following equation:

2.5 Comments on Marking of Appliances

The Statewide CASE Team supports the proposed product marking requirement in Section 1607. Our understanding is that the proposed requirement is consistent with current standard industry practice.

D10

DOCKETED	
Docket Number:	19-AAER-01
Project Title:	Spray Sprinkler Bodies
TN #:	228756
Document Title:	Brent Mecham Comments Comment for Docket # 19-AAER-01
Description:	N/A
Filer:	System
Organization:	Brent Mecham
Submitter Role:	Public
Submission Date:	6/17/2019 4:21:23 AM
Docketed Date:	6/17/2019

*Comment Received From: Brent Mecham
Submitted On: 6/17/2019
Docket Number: 19-AAER-01*

Comment for Docket # 19-AAER-01

The Irrigation Association is a trade association with more than 1600 member companies, including manufacturers of spray sprinkler bodies, many of them headquartered in California.

The Irrigation Association supports the Energy Commission's proposed intent to create a regulation that will provide significant water and energy savings that will reduce water use in the managed landscape and at the same time allow California's citizens to benefit from what healthy plants provide to the urban environment. The Irrigation Association on behalf of its members has strived to be engaged in the regulatory process by offering data, information and testimony of the benefits of using pressure regulating spray sprinkler bodies. The Irrigation Association also appreciates the work completed by the Energy Commission in the Final Staff Report to document the potential water and energy savings that can be accomplished by utilizing pressure-regulating spray sprinkler bodies.

E1

The Irrigation Association has likewise worked closely with the EPA WaterSense program as they developed a testing specification for certifying and labeling spray sprinkler bodies. The specification has been well received by the manufacturers and indeed the largest manufacturers of spray head bodies have already met the requirements for labeling spray sprinkler bodies. The intent of the CEC to use the EPA WaterSense specification has actually reinforced the value of this program and minimized potential confusion for the industry and the consumer. The Irrigation Association supports the intent of CEC to use the same testing specification as EPA WaterSense.

E2

Because of how the EPA WaterSense program functions with certifying organizations to monitor the testing of products, evaluating their performance and monitoring the products in the marketplace for compliance, the IA on behalf of its member companies feels that states that add their own additional requirements makes the testing process confusing for the manufacturers and adds additional costs for testing and compliance. A preferred approach is to consider what Colorado has done in House Bill 19-1231 by simply requiring that spray sprinkler bodies comply with Water Sense certification by January 1, 2020 with recently passed and signed legislation. http://leg.colorado.gov/sites/default/files/2019a_1231_signed.pdf

E3

While we recognize that each state is unique in their needs and regulatory process, it is an example of how using a national program without complicating it with special additional requirements will serve the ultimate goal of improving resource efficiency. We encourage the CEC to follow this path.

Respectfully submitted on behalf of the Irrigation Association

Brent Q. Mecham
Industry Development Director

Additional submitted attachment is included below.

An Act

HOUSE BILL 19-1231

BY REPRESENTATIVE(S) Froelich and Kipp, Benavidez, Jaquez Lewis, Melton, Mullica, Titone, Valdez A., Arndt, Bird, Buentello, Cutter, Gray, Hooton, Kennedy, Michaelson Jenet, Roberts, Snyder, Weissman, Becker, Buckner, Duran, Galindo, Jackson, Lontine, Sirota;
also SENATOR(S) Lee and Priola, Ginal, Story, Winter.

CONCERNING EFFICIENCY STANDARDS FOR EQUIPMENT SOLD IN COLORADO, AND, IN CONNECTION THEREWITH, REQUIRING CERTAIN APPLIANCES, PLUMBING FIXTURES, AND OTHER PRODUCTS SOLD FOR RESIDENTIAL OR COMMERCIAL USE TO MEET ENERGY EFFICIENCY AND WATER EFFICIENCY STANDARDS.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. In Colorado Revised Statutes, **repeal and reenact, with amendments,** article 7.5 of title 6 as follows:

ARTICLE 7.5 **Water and Energy Efficiency Standards**

6-7.5-101. Legislative declaration. (1) THE GENERAL ASSEMBLY FINDS AND DETERMINES THAT EFFICIENCY STANDARDS FOR CERTAIN

Capital letters or bold & italic numbers indicate new material added to existing law; dashes through words or numbers indicate deletions from existing law and such material is not part of the act.

PRODUCTS SOLD IN COLORADO:

(a) ASSURE CONSUMERS AND BUSINESSES THAT SUCH PRODUCTS MEET MINIMUM EFFICIENCY PERFORMANCE LEVELS, THUS REDUCING ENERGY AND WATER WASTE AND SAVING CONSUMERS AND BUSINESSES MONEY ON UTILITY BILLS;

(b) PROTECT CONSUMERS AND BUSINESSES AGAINST MANUFACTURERS WHO WOULD OTHERWISE SELL, IN COLORADO, LESS EFFICIENT APPLIANCES THAT THEY CANNOT SELL IN STATES THAT HAVE HIGHER STANDARDS;

(c) SAVE ENERGY AND THUS REDUCE POLLUTION AND OTHER ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PRODUCTION, DISTRIBUTION, AND USE OF ELECTRICITY, NATURAL GAS, AND OTHER FUELS;

(d) IMPROVE ELECTRIC SYSTEM RELIABILITY AND POTENTIALLY REDUCE THE NEED FOR NEW ENERGY AND WATER INFRASTRUCTURE BASED ON THE RESULTING ENERGY AND WATER SAVINGS;

(e) APPLY TO PRODUCTS AVAILABLE AT A PRICE EQUAL TO OR LESS THAN NONCOMPLIANT PRODUCTS, OR AVAILABLE AT A MINIMAL COST PREMIUM;

(f) HAVE SAVED COLORADANS BILLIONS OF GALLONS OF WATER SINCE 2014, WHEN WATERSENSE STANDARDS WERE ENACTED FOR PLUMBING FIXTURES, WITHOUT SACRIFICING QUALITY OR PRODUCT PERFORMANCE; AND

(g) CONTRIBUTE TO THE ECONOMY OF THIS STATE BY HELPING TO BETTER BALANCE SUPPLY AND DEMAND FOR BOTH ENERGY AND WATER, THUS REDUCING THE UPWARD PRESSURE ON PRICES FOR ELECTRICITY, NATURAL GAS, AND WATER CAUSED BY INCREASED DEMAND. IN ADDITION, EFFICIENCY STANDARDS ALLOW CONSUMERS AND BUSINESSES TO USE THE MONEY THEY SAVE ON UTILITY BILLS TO PURCHASE LOCAL GOODS AND SERVICES.

(2) THEREFORE, THE GENERAL ASSEMBLY DECLARES THAT THE ADOPTION OF ENERGY AND WATER EFFICIENCY STANDARDS IN ACCORDANCE WITH THIS ARTICLE 7.5 IS A MATTER OF STATE AND LOCAL CONCERN AND SERVES THE PUBLIC INTEREST OF THE PEOPLE OF COLORADO.

6-7.5-102. Definitions. AS USED IN THIS ARTICLE 7.5, UNLESS THE CONTEXT OTHERWISE REQUIRES:

(1) "AIR COMPRESSOR" MEANS A COMPRESSOR THAT:

(a) IS DESIGNED TO COMPRESS AIR;

(b) HAS AN INLET THAT IS OPEN TO THE ATMOSPHERE OR OTHER SOURCE OF AIR; AND

(c) CONSISTS OF A COMPRESSION ELEMENT, ALSO KNOWN AS A BARE COMPRESSOR; ONE OR MORE DRIVERS; MECHANICAL EQUIPMENT TO DRIVE THE COMPRESSION ELEMENT; AND ANY ANCILLARY EQUIPMENT.

(2) "ANSI" MEANS THE AMERICAN NATIONAL STANDARDS INSTITUTE OR ITS SUCCESSOR ORGANIZATION.

(3) "ANSI C79.1-2002" MEANS THE ANSI STANDARD FOR "ELECTRIC LAMPS - NOMENCLATURE FOR GLASS BULBS INTENDED FOR USE WITH ELECTRIC LAMPS", APPROVED SEPTEMBER 16, 2002.

(4) "APSP" MEANS THE ASSOCIATION OF POOL AND SPA PROFESSIONALS OR ITS SUCCESSOR ORGANIZATION.

(5) "CCR" MEANS THE CALIFORNIA CODE OF REGULATIONS, AS AMENDED.

(6) "COLD-ONLY UNIT" MEANS A WATER COOLER THAT DISPENSES COLD WATER ONLY.

(7) "COMMERCIAL DISHWASHER" MEANS A MACHINE DESIGNED TO CLEAN AND SANITIZE PLATES, POTS, PANS, GLASSES, CUPS, BOWLS, UTENSILS, AND TRAYS BY APPLYING SPRAYS OF DETERGENT SOLUTION, WITH OR WITHOUT BLASTING MEDIA GRANULES, AND A SANITIZING RINSE.

(8) "COMMERCIAL FRYER" MEANS AN APPLIANCE, INCLUDING A COOKING VESSEL, IN WHICH:

(a) OIL IS PLACED TO SUCH A DEPTH THAT THE FOOD TO BE COOKED IS ESSENTIALLY SUPPORTED BY DISPLACEMENT OF THE COOKING FLUID

RATHER THAN BY THE BOTTOM OF THE VESSEL; AND

(b) HEAT IS DELIVERED TO THE COOKING FLUID BY MEANS OF EITHER:

(I) AN IMMERSED ELECTRIC ELEMENT OR BAND-WRAPPED VESSEL; OR

(II) HEAT TRANSFER FROM GAS BURNERS THROUGH EITHER THE WALLS OF THE VESSEL OR TUBES PASSING THROUGH THE COOKING FLUID.

(9) "COMMERCIAL HOT FOOD HOLDING CABINET" MEANS A HEATED, FULLY ENCLOSED COMPARTMENT WITH ONE OR MORE SOLID OR TRANSPARENT DOORS DESIGNED TO MAINTAIN THE TEMPERATURE OF HOT FOOD THAT HAS BEEN COOKED USING A SEPARATE APPLIANCE. "COMMERCIAL HOT FOOD HOLDING CABINET" DOES NOT INCLUDE HEATED GLASS MERCHANDISING CABINETS, DRAWER WARMERS, OR COOK AND HOLD APPLIANCES.

(10) "COMMERCIAL STEAM COOKER" MEANS A DEVICE WITH ONE OR MORE FOOD-STEAMING COMPARTMENTS IN WHICH THERMAL ENERGY IS TRANSFERRED FROM THE STEAM TO THE FOOD BY DIRECT CONTACT. "COMMERCIAL STEAM COOKER" INCLUDES COUNTERTOP MODELS, WALL-MOUNTED MODELS, AND FLOOR MODELS MOUNTED ON A STAND, PEDESTAL, OR CABINET-STYLE BASE.

(11) "COMPENSATION" MEANS MONEY OR ANY OTHER THING OF VALUE, REGARDLESS OF FORM, RECEIVED OR TO BE RECEIVED BY A PERSON FOR GOODS OR SERVICES RENDERED.

(12) "COMPRESSOR" MEANS A MACHINE OR APPARATUS THAT CONVERTS DIFFERENT TYPES OF ENERGY INTO THE POTENTIAL ENERGY OF GAS PRESSURE FOR DISPLACEMENT AND COMPRESSION OF GASEOUS MEDIA TO ANY HIGHER PRESSURE VALUES ABOVE ATMOSPHERIC PRESSURE AND HAS A PRESSURE RATIO AT FULL-LOAD OPERATING PRESSURE GREATER THAN 1.3 ATMOSPHERES.

(13) "COMPUTER" AND "COMPUTER MONITOR" HAVE THE MEANINGS SET FORTH IN 20 CCR SEC. 1602 (v).

(14) "COOK AND COLD UNIT" MEANS A WATER COOLER THAT DISPENSES BOTH COLD AND ROOM-TEMPERATURE WATER.

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(15) "ENERGY STAR PROGRAM" MEANS THE FEDERAL PROGRAM AUTHORIZED BY 42 U.S.C. SEC. 6294a, AS AMENDED.

(16) "EXECUTIVE DIRECTOR" MEANS THE EXECUTIVE DIRECTOR OF THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT OR THE EXECUTIVE DIRECTOR'S DESIGNEE.

(17) "FAUCET" MEANS:

(a) A LAVATORY FAUCET, KITCHEN FAUCET, METERING FAUCET, OR PUBLIC LAVATORY FAUCET; AND

(b) A REPLACEMENT AERATOR FOR A LAVATORY FAUCET, PUBLIC LAVATORY FAUCET, OR KITCHEN FAUCET.

(18) "FLUSHOMETER-VALVE WATER CLOSET" MEANS A TYPE OF COMMERCIAL TOILET THAT USES A VALVE FOR FLUSHING BY OPERATION OF A HANDLE THAT DISCHARGES A DEFINITE QUANTITY OF WATER UNDER PRESSURE DIRECTLY INTO THE FIXTURE.

(19) "GENERAL SERVICE LAMP":

(a) MEANS A LAMP THAT:

(I) HAS A BASE THAT COMPLIES WITH ANSI STANDARDS;

(II) IS ABLE TO OPERATE AT A VOLTAGE:

(A) OF TWELVE OR TWENTY-FOUR VOLTS;

(B) AT OR BETWEEN ONE HUNDRED AND ONE HUNDRED THIRTY VOLTS;

(C) AT OR BETWEEN TWO HUNDRED TWENTY AND TWO HUNDRED FORTY VOLTS; OR

(D) OF TWO HUNDRED SEVENTY-SEVEN VOLTS FOR INTEGRATED LAMPS OR ANY VOLTAGE FOR NONINTEGRATED LAMPS;

(III) HAS AN INITIAL LUMEN OUTPUT GREATER THAN OR EQUAL TO

THREE HUNDRED TEN LUMENS, OR TWO HUNDRED THIRTY-TWO LUMENS FOR MODIFIED SPECTRUM GENERAL SERVICE INCANDESCENT LAMPS, AND LESS THAN OR EQUAL TO THREE THOUSAND THREE HUNDRED LUMENS;

(IV) IS NOT A LIGHT FIXTURE OR AN LED DOWNLIGHT RETROFIT KIT;
AND

(V) IS USED IN GENERAL LIGHTING APPLICATIONS;

(b) INCLUDES GENERAL SERVICE INCANDESCENT LAMPS, COMPACT FLUORESCENT LAMPS, GENERAL SERVICE LED LAMPS, AND GENERAL SERVICE ORGANIC LED LAMPS;

(c) DOES NOT INCLUDE:

(I) APPLIANCE LAMPS;

(II) BLACK LIGHT LAMPS;

(III) BUG LAMPS;

(IV) COLORED LAMPS;

(V) G-SHAPE LAMPS WITH A DIAMETER OF FIVE INCHES OR MORE AS DEFINED IN ANSI C79.1-2002;

(VI) GENERAL SERVICE FLUORESCENT LAMPS;

(VII) HIGH-INTENSITY DISCHARGE LAMPS;

(VIII) INFRARED LAMPS;

(IX) J, JC, JCD, JCS, JCV, JCX, JD, JS, AND JT-SHAPE LAMPS THAT DO NOT HAVE EDISON SCREW BASES;

(X) LAMPS THAT HAVE A WEDGE BASE OR PREFOCUS BASE;

(XI) LEFT-HAND THREAD LAMPS;

(XII) MARINE LAMPS;

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- (XIII) MARINE SIGNAL SERVICE LAMPS;
- (XIV) MINE SERVICE LAMPS;
- (XV) MR-SHAPE LAMPS THAT:
 - (A) HAVE A FIRST NUMBER SYMBOL EQUAL TO SIXTEEN (DIAMETER EQUAL TO TWO INCHES), AS DEFINED IN ANSI C79.1-2002;
 - (B) OPERATE AT TWELVE VOLTS; AND
 - (C) HAVE A LUMEN OUTPUT GREATER THAN OR EQUAL TO EIGHT HUNDRED;
- (XVI) OTHER FLUORESCENT LAMPS NOT DESCRIBED IN SUBSECTION (19)(b) OF THIS SECTION;
- (XVII) PLANT LIGHT LAMPS;
- (XVIII) R20 SHORT LAMPS;
- (XIX) REFLECTOR LAMPS THAT HAVE A FIRST NUMBER SYMBOL LESS THAN SIXTEEN (DIAMETER LESS THAN TWO INCHES) AS DEFINED IN ANSI C79.1-2002 AND THAT DO NOT HAVE E26/E24, E26d, E26/50x39, E26/53x39, E29/28, E29/53x39, E39, E39d, EP39, OR EX39 BASES;
- (XX) S-SHAPE OR G-SHAPE LAMPS THAT HAVE A FIRST NUMBER SYMBOL LESS THAN OR EQUAL TO TWELVE AND ONE-HALF (DIAMETER LESS THAN OR EQUAL TO 1.5625 INCHES) AS DEFINED IN ANSI C79.1-2002;
- (XXI) SIGN SERVICE LAMPS;
- (XXII) SILVER BOWL LAMPS;
- (XXIII) SHOWCASE LAMPS;
- (XXIV) SPECIALTY MR LAMPS;
- (XXV) T-SHAPE LAMPS THAT:

(A) HAVE A FIRST NUMBER SYMBOL LESS THAN OR EQUAL TO EIGHT (DIAMETER LESS THAN OR EQUAL TO ONE INCH), AS DEFINED IN ANSI C79.1-2002;

(B) HAVE A NOMINAL OVERALL LENGTH LESS THAN TWELVE INCHES;
AND

(C) ARE NOT COMPACT FLUORESCENT LAMPS; OR

(XXVI) TRAFFIC SIGNAL LAMPS.

(20) "GPM" MEANS GALLONS PER MINUTE.

(21) "HIGH COLOR RENDERING INDEX (CRI) FLUORESCENT LAMP" MEANS A FLUORESCENT LAMP WITH A CRI OF EIGHTY-SEVEN OR GREATER THAT IS NOT A COMPACT FLUORESCENT LAMP.

(22) "HOT AND COLD UNIT" MEANS A WATER COOLER THAT DISPENSES BOTH HOT AND COLD WATER. IT MAY ALSO DISPENSE ROOM-TEMPERATURE WATER.

(23) "ICC" MEANS THE INTERNATIONAL CODE COUNCIL OR ITS SUCCESSOR ORGANIZATION.

(24) (a) "LAMP" MEANS A DEVICE THAT EMITS LIGHT AND IS USED TO ILLUMINATE AN INDOOR OR OUTDOOR SPACE.

(b) "LAMP" DOES NOT INCLUDE A HEAT LAMP.

(25) "LED" MEANS LIGHT-EMITTING DIODE.

(26) "LOW-EFFICIENCY PLUMBING FIXTURE" MEANS ANY OF THE FOLLOWING PLUMBING FIXTURES OR FITTINGS THAT IS NOT A WATERSENSE-LISTED PLUMBING FIXTURE:

(a) A LAVATORY FAUCET;

(b) A SHOWER HEAD;

(c) A FLUSHING URINAL;

(d) A FLUSHOMETER-VALVE WATER CLOSET; OR

(e) A TANK-TYPE TOILET OR TANK-TYPE WATER CLOSET.

(27) "METERING FAUCET" MEANS A FITTING THAT, WHEN TURNED ON, WILL GRADUALLY SHUT OFF THE FLOW OF WATER OVER A PERIOD OF SEVERAL SECONDS.

(28) "NEMA" MEANS THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION OR ITS SUCCESSOR ORGANIZATION.

(29) "PORTABLE AIR CONDITIONER" MEANS A PORTABLE ENCASED ASSEMBLY, OTHER THAN A PACKAGED TERMINAL AIR CONDITIONER, DUCTLESS PORTABLE AIR CONDITIONER, ROOM AIR CONDITIONER, OR DEHUMIDIFIER, THAT:

(a) DELIVERS COOLED, CONDITIONED AIR TO AN ENCLOSED SPACE;

(b) IS POWERED BY SINGLE-PHASE ELECTRIC CURRENT;

(c) INCLUDES A SOURCE OF REFRIGERATION;

(d) MAY BE A SINGLE-DUCT OR DUAL-DUCT PORTABLE AIR CONDITIONER; AND

(e) MAY INCLUDE ADDITIONAL MEANS FOR AIR CIRCULATION AND HEATING.

(30) "PORTABLE ELECTRIC SPA" MEANS A FACTORY-BUILT ELECTRIC SPA OR HOT TUB. IT MAY OR MAY NOT INCLUDE ANY COMBINATION OF INTEGRAL CONTROLS, WATER HEATING, AND WATER CIRCULATING EQUIPMENT.

(31) "PRESSURE REGULATOR" MEANS A DEVICE THAT MAINTAINS CONSTANT OPERATING PRESSURE IMMEDIATELY DOWNSTREAM FROM A SPRAY SPRINKLER BODY, GIVEN HIGHER PRESSURE UPSTREAM OF THE DEVICE.

(32) "PSI" MEANS POUNDS PER SQUARE INCH.

(33) "PUBLIC LAVATORY FAUCET" MEANS A FITTING DESIGNED AND MARKETED FOR INSTALLATION IN A NONRESIDENTIAL BATHROOM, WHICH BATHROOM IS EXPOSED TO WALK-IN TRAFFIC.

(34) "REPLACEMENT AERATOR" MEANS AN AERATOR SOLD AS A REPLACEMENT, SEPARATE FROM THE FAUCET TO WHICH IT IS INTENDED TO BE ATTACHED.

(35) "RESIDENTIAL VENTILATING FAN" MEANS AN INLINE FAN DESIGNED TO BE USED IN A BATHROOM OR UTILITY ROOM AND WHOSE PURPOSE IS TO MOVE AIR FROM INSIDE THE BUILDING TO THE OUTDOORS. IT MAY BE CEILING-MOUNTED, WALL-MOUNTED, OR REMOTELY MOUNTED.

(36) "SPRAY SPRINKLER BODY" MEANS THE EXTERIOR CASE OR SHELL OF A SPRINKLER, WHICH CASE OR SHELL:

(a) INCORPORATES A MEANS OF CONNECTION TO THE PIPING SYSTEM;
AND

(b) IS DESIGNED TO CONVEY WATER TO A NOZZLE OR ORIFICE.

(37) "UNINTERRUPTIBLE POWER SUPPLY" MEANS A POWER SYSTEM FOR MAINTAINING CONTINUITY OF LOAD POWER IN CASE OF INPUT POWER FAILURE. IT MAY CONSIST OF A COMBINATION OF ONE OR MORE BATTERY CHARGERS, CONVERTORS, SWITCHES, AND BATTERIES OR OTHER ENERGY STORAGE DEVICES.

(38) "WATER COOLER" MEANS A FREESTANDING DEVICE THAT CONSUMES ENERGY TO COOL OR HEAT, OR BOTH COOL AND HEAT, POTABLE WATER.

(39) "WATERSENSE-LISTED PLUMBING FIXTURE" MEANS A PLUMBING FIXTURE OR PLUMBING FIXTURE FITTING THAT HAS BEEN:

(a) TESTED BY AN ACCREDITED THIRD-PARTY CERTIFYING BODY OR LABORATORY IN ACCORDANCE WITH THE FEDERAL ENVIRONMENTAL PROTECTION AGENCY'S WATERSENSE PROGRAM OR A SUCCESSOR PROGRAM;

(b) CERTIFIED BY THE BODY OR LABORATORY AS MEETING THE PERFORMANCE AND EFFICIENCY REQUIREMENTS OF THE WATERSENSE

PROGRAM; AND

(c) AUTHORIZED BY THE WATERSENSE PROGRAM TO USE ITS LABEL.

(40) "WATERSENSE PROGRAM" MEANS THE FEDERAL PROGRAM AUTHORIZED BY 42 U.S.C. SEC. 6294b.

6-7.5-103. Low-efficiency plumbing fixtures. (1) (a) EFFECTIVE SEPTEMBER 1, 2019, A PERSON SHALL NOT SELL A NEW LOW-EFFICIENCY PLUMBING FIXTURE, OTHER THAN A FLUSHOMETER-VALVE WATER CLOSET, IN COLORADO.

(b) EFFECTIVE JANUARY 1, 2021, A PERSON SHALL NOT SELL A NEW LOW-EFFICIENCY FLUSHOMETER-VALVE WATER CLOSET IN COLORADO.

(2) THIS SECTION DOES NOT PREEMPT ANY ACTION OF A MUNICIPALITY, COUNTY, OR CITY AND COUNTY THAT PRESCRIBES ADDITIONAL OR MORE RESTRICTIVE WATER CONSERVATION OR ENERGY EFFICIENCY REQUIREMENTS AFFECTING THE SALE OR USE OF PLUMBING FIXTURES, APPLIANCES, OR OTHER PRODUCTS IF THE REQUIREMENTS COMPLY WITH THE STANDARD SPECIFIED IN SUBSECTION (1) OF THIS SECTION.

6-7.5-104. Scope and applicability. (1) SUBJECT TO SUBSECTION (2) OF THIS SECTION AND AS FURTHER SPECIFIED IN SECTION 6-7.5-105, THIS ARTICLE 7.5 APPLIES TO THE FOLLOWING PRODUCTS SOLD AS NEW IN COLORADO:

- (a) AIR COMPRESSORS;
- (b) COMMERCIAL DISHWASHERS;
- (c) COMMERCIAL FRYERS;
- (d) COMMERCIAL HOT FOOD HOLDING CABINETS;
- (e) COMMERCIAL STEAM COOKERS;
- (f) COMPUTERS AND COMPUTER MONITORS;
- (g) FAUCETS;

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- (h) FLUSHOMETER-VALVE WATER CLOSETS;
- (i) GENERAL SERVICE LAMPS;
- (j) HIGH CRI FLUORESCENT LAMPS;
- (k) PORTABLE AIR CONDITIONERS;
- (l) PORTABLE ELECTRIC SPAS;
- (m) RESIDENTIAL VENTILATING FANS;
- (n) SPRAY SPRINKLER BODIES;
- (o) UNINTERRUPTIBLE POWER SUPPLIES; AND
- (p) WATER COOLERS.

(2) THIS ARTICLE 7.5 DOES NOT APPLY TO:

(a) PRODUCTS INSTALLED IN MOBILE MANUFACTURED HOMES AT THE TIME OF CONSTRUCTION;

(b) PRODUCTS DESIGNED EXPRESSLY FOR INSTALLATION AND USE IN RECREATIONAL VEHICLES; OR

(c) PRODUCTS HELD IN INVENTORY ON OR BEFORE THE EFFECTIVE DATE OF THE APPLICABLE STANDARD FOR EACH CATEGORY OF PRODUCT SET FORTH IN THIS ARTICLE 7.5.

(3) THIS ARTICLE 7.5 IS NOT ENFORCEABLE AGAINST AN EMPLOYEE OF A CONTRACTOR WHO INSTALLS, REPAIRS, OR REPLACES APPLIANCES AND COLLECTS FROM THE CUSTOMER AN AMOUNT REPRESENTING BOTH PARTS AND LABOR.

6-7.5-105. Standards - effective dates - publication of material incorporated by reference. (1) THE EXECUTIVE DIRECTOR NEED NOT ADOPT BY RULE, BUT SHALL COLLECT AND MAKE PUBLICLY AVAILABLE IN HARD COPY, THROUGH A WEBSITE, OR BOTH, THE FEDERAL RULES AND OTHER RULES AND STANDARDS REFERRED TO IN THIS SECTION. THE REFERENCES IN

THIS SECTION ARE TO THE RULES AND STANDARDS AS THEY EXISTED ON THE DATES SPECIFIED OR, IF NOT SO SPECIFIED, AS THEY EXISTED ON AUGUST 2, 2019, AND DO NOT INCLUDE LATER EDITIONS OR REVISIONS.

(2) ON OR AFTER JANUARY 1, 2020, A PERSON SHALL NOT SELL OR OFFER FOR SALE IN COLORADO A GENERAL SERVICE LAMP UNLESS IT EITHER:

(a) IS SUBJECT TO FEDERAL PREEMPTION; OR

(b) MEETS OR EXCEEDS A LAMP EFFICACY OF FORTY-FIVE LUMENS PER WATT, WHEN TESTED IN ACCORDANCE WITH THE APPLICABLE FEDERAL TEST PROCEDURES FOR GENERAL SERVICE LAMPS PRESCRIBED IN 10 CFR 430.23 (gg), AS IN EFFECT ON JANUARY 3, 2017.

(3) ON OR AFTER JANUARY 1, 2021, THE FOLLOWING NEW PRODUCTS SHALL NOT BE SOLD, LEASED, OR RENTED IN COLORADO UNLESS THE EFFICIENCY OF THE NEW PRODUCT MEETS OR EXCEEDS THE FOLLOWING EFFICIENCY STANDARDS, AS APPLICABLE:

(a) COMMERCIAL DISHWASHERS INCLUDED IN THE SCOPE OF THE ENERGY STAR PROGRAM REQUIREMENTS PRODUCT SPECIFICATION FOR COMMERCIAL DISHWASHERS, VERSION 2.0, MUST MEET THE QUALIFICATION CRITERIA OF THAT SPECIFICATION.

(b) COMMERCIAL FRYERS INCLUDED IN THE SCOPE OF THE ENERGY STAR PROGRAM REQUIREMENTS PRODUCT SPECIFICATION FOR COMMERCIAL FRYERS, VERSION 2.0, MUST MEET THE QUALIFICATION CRITERIA OF THAT SPECIFICATION.

(c) COMMERCIAL HOT FOOD HOLDING CABINETS MUST HAVE A MAXIMUM IDLE ENERGY RATE OF FORTY WATTS PER CUBIC FOOT OF INTERIOR VOLUME, AS DETERMINED BY THE "IDLE ENERGY RATE-DRY TEST" IN ASTM STANDARD F2140-11, "TEST METHOD FOR THE PERFORMANCE OF HOT FOOD HOLDING CABINETS", PUBLISHED BY ASTM INTERNATIONAL, FORMERLY KNOWN AS THE AMERICAN SOCIETY FOR TESTING AND MATERIALS. INTERIOR VOLUME MUST BE MEASURED AS PRESCRIBED IN THE ENERGY STAR PROGRAM REQUIREMENTS PRODUCT SPECIFICATION FOR COMMERCIAL HOT FOOD HOLDING CABINETS, VERSION 2.0.

(d) COMMERCIAL STEAM COOKERS MUST MEET THE REQUIREMENTS

OF THE ENERGY STAR PROGRAM REQUIREMENTS PRODUCT SPECIFICATION
FOR COMMERCIAL STEAM COOKERS, VERSION 1.2.

(e) COMPUTERS AND COMPUTER MONITORS MUST MEET THE REQUIREMENTS OF SECTION 1605.3 (v) OF TITLE 20 OF THE CCR, AND COMPLIANCE WITH THOSE REQUIREMENTS MUST BE AS MEASURED IN ACCORDANCE WITH TEST METHODS PRESCRIBED IN SECTION 1604 (v) OF THOSE REGULATIONS.

(f) FAUCETS, EXCEPT FOR METERING FAUCETS, MUST MEET THE FOLLOWING STANDARDS WHEN TESTED IN ACCORDANCE WITH 10 CFR 430, SUBPART B, APPENDIX S, AND COMPLIANCE WITH THOSE STANDARDS MUST BE ESTABLISHED USING THE "UNIFORM TEST METHOD FOR MEASURING THE WATER CONSUMPTION OF FAUCETS AND SHOWERHEADS", AS IN EFFECT ON JANUARY 3, 2017:

(I) RESIDENTIAL KITCHEN FAUCETS AND REPLACEMENT AERATORS MUST NOT EXCEED A MAXIMUM FLOW RATE OF 1.8 GPM AT SIXTY PSI, WITH OPTIONAL TEMPORARY FLOW OF 2.2 GPM, PROVIDED THEY DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GPM AT SIXTY PSI AFTER EACH USE.

(II) PUBLIC LAVATORY FAUCETS AND REPLACEMENT AERATORS MUST NOT EXCEED A MAXIMUM FLOW RATE OF 0.5 GPM AT SIXTY PSI.

(g) FLUSHOMETER-VALVE WATER CLOSETS INCLUDED WITHIN THE SCOPE OF THE WATERSense SPECIFICATION FOR FLUSHOMETER-VALVE WATER CLOSETS, VERSION 1.0, MUST MEET THE WATER EFFICIENCY AND PERFORMANCE CRITERIA AND OTHER REQUIREMENTS OF THAT SPECIFICATION.

(h) HIGH CRI FLUORESCENT LAMPS MUST MEET THE MINIMUM EFFICACY REQUIREMENTS CONTAINED IN 10 CFR 430.32 (n)(4) AS IN EFFECT ON JANUARY 3, 2017, AS MEASURED IN ACCORDANCE WITH 10 CFR 430, SUBPART B, APPENDIX R, "UNIFORM TEST METHOD FOR MEASURING AVERAGE LAMP EFFICACY (LE), COLOR RENDERING INDEX (CRI), AND CORRELATED COLOR TEMPERATURE (CCT) OF ELECTRIC LAMPS", AS IN EFFECT ON JANUARY 3, 2017.

(i) PORTABLE ELECTRIC SPAS MUST MEET THE REQUIREMENTS OF THE "AMERICAN NATIONAL STANDARD FOR PORTABLE ELECTRIC SPA ENERGY

EFFICIENCY" (ANSI/APSP/ICC-14).

(j) NEW RESIDENTIAL VENTILATING FANS MUST MEET THE QUALIFICATION CRITERIA OF THE ENERGY STAR PROGRAM REQUIREMENTS PRODUCT SPECIFICATION FOR RESIDENTIAL VENTILATING FANS, VERSION 3.2.

(k) SPRAY SPRINKLER BODIES THAT ARE NOT SPECIFICALLY EXCLUDED FROM THE SCOPE OF THE WATERSENSE SPECIFICATION FOR SPRAY SPRINKLER BODIES, VERSION 1.0, MUST INCLUDE AN INTEGRAL PRESSURE REGULATOR AND MUST MEET THE WATER EFFICIENCY AND PERFORMANCE CRITERIA AND OTHER REQUIREMENTS OF THAT SPECIFICATION.

(l) UNINTERRUPTIBLE POWER SUPPLIES THAT UTILIZE A NEMA 1-15P OR 5-15P INPUT PLUG AND HAVE AN ALTERNATING CURRENT OUTPUT MUST HAVE AN AVERAGE LOAD-ADJUSTED EFFICIENCY THAT MEETS OR EXCEEDS THE VALUES SHOWN ON PAGE 193 OF THE PREPUBLICATION FINAL RULE "ENERGY CONSERVATION PROGRAM: ENERGY CONSERVATION STANDARDS FOR UNINTERRUPTIBLE POWER SUPPLIES" ISSUED BY THE UNITED STATES DEPARTMENT OF ENERGY ON DECEMBER 28, 2016, AS MEASURED IN ACCORDANCE WITH TEST PROCEDURES PRESCRIBED IN 10 CFR 430, SUBPART B, APPENDIX Y, "UNIFORM TEST METHOD FOR MEASURING THE ENERGY CONSUMPTION OF BATTERY CHARGERS", AS IN EFFECT ON JANUARY 11, 2017.

(m) WATER COOLERS INCLUDED IN THE SCOPE OF THE ENERGY STAR PROGRAM REQUIREMENTS PRODUCT SPECIFICATION FOR WATER COOLERS, VERSION 2.0, MUST HAVE AN "ON" MODE WITH NO-WATER-DRAW ENERGY CONSUMPTION LESS THAN OR EQUAL TO THE FOLLOWING VALUES AS MEASURED IN ACCORDANCE WITH THE TEST REQUIREMENTS OF THAT PROGRAM:

(I) 0.16 KILOWATT-HOURS PER DAY FOR COLD-ONLY UNITS AND COOK AND COLD UNITS;

(II) 0.87 KILOWATT-HOURS PER DAY FOR STORAGE-TYPE HOT AND COLD UNITS; AND

(III) 0.18 KILOWATT-HOURS PER DAY FOR ON-DEMAND HOT AND COLD UNITS.

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(4) ON OR AFTER FEBRUARY 1, 2022, THE FOLLOWING NEW PRODUCTS SHALL NOT BE SOLD, LEASED, OR RENTED IN COLORADO UNLESS THE EFFICIENCY OF THE NEW PRODUCT MEETS OR EXCEEDS THE FOLLOWING EFFICIENCY STANDARDS, AS APPLICABLE:

(a) AIR COMPRESSORS THAT MEET THE TWELVE CRITERIA LISTED ON PAGE 350 TO 351 OF THE "ENERGY CONSERVATION STANDARDS FOR AIR COMPRESSORS" FINAL RULE ISSUED BY THE UNITED STATES DEPARTMENT OF ENERGY ON DECEMBER 5, 2016, MUST MEET THE REQUIREMENTS IN TABLE 1 ON PAGE 352 FOLLOWING THE INSTRUCTIONS ON PAGE 353 AND AS MEASURED IN ACCORDANCE WITH 10 CFR 431, SUBPART T, APPENDIX A, "UNIFORM TEST METHOD FOR CERTAIN AIR COMPRESSORS", AS IN EFFECT ON JULY 3, 2017.

(b) NEW PORTABLE AIR CONDITIONERS MUST HAVE A COMBINED ENERGY EFFICIENCY RATIO (CEER), AS MEASURED IN ACCORDANCE WITH 10 CFR 430, SUBPART B, APPENDIX CC, "UNIFORM TEST METHOD FOR MEASURING THE ENERGY CONSUMPTION OF PORTABLE AIR CONDITIONERS", AS IN EFFECT ON JANUARY 3, 2017, THAT IS GREATER THAN OR EQUAL TO:

$$1.04 \times \text{SACC} / (3.7117 \times \text{SACC}^{0.6384})$$

WHERE SACC IS THE SEASONALLY ADJUSTED COOLING CAPACITY IN BRITISH THERMAL UNITS PER HOUR.

6-7.5-106. New and revised standards - rules. THE EXECUTIVE DIRECTOR MAY ADOPT BY RULE A MORE RECENT VERSION OF ANY STANDARD OR TEST METHOD ESTABLISHED IN SECTION 6-7.5-105, INCLUDING ANY PRODUCT DEFINITION ASSOCIATED WITH THE STANDARD OR TEST METHOD, IN ORDER TO MAINTAIN OR IMPROVE CONSISTENCY WITH OTHER COMPARABLE STANDARDS IN OTHER STATES, SO LONG AS THE RESULTING EFFICIENCY IS EQUAL TO OR GREATER THAN THE EFFICIENCY ACHIEVED USING THE PRIOR STANDARD OR TEST METHOD. THE EXECUTIVE DIRECTOR SHALL ALLOW AT LEAST A ONE-YEAR DELAY BETWEEN THE ADOPTION BY RULE AND THE ENFORCEMENT OF ANY NEW STANDARD OR TEST METHOD.

6-7.5-107. Protection against repeal of federal standards. (1) IF ANY OF THE ENERGY OR WATER CONSERVATION STANDARDS ISSUED OR APPROVED FOR PUBLICATION BY THE OFFICE OF THE UNITED STATES SECRETARY OF ENERGY AS OF JANUARY 1, 2018, AS SET FORTH IN 10 CFR

430-431 AND PROMULGATED PURSUANT TO THE "ENERGY POLICY AND CONSERVATION ACT", PUB.L. 94-163, ARE WITHDRAWN, REPEALED, OR OTHERWISE VOIDED, THE MINIMUM ENERGY OR WATER EFFICIENCY LEVEL PERMITTED FOR PRODUCTS PREVIOUSLY SUBJECT TO FEDERAL ENERGY OR WATER CONSERVATION STANDARDS MUST BE THE PREVIOUSLY APPLICABLE FEDERAL STANDARDS, AND NO SUCH NEW PRODUCT MAY BE SOLD OR OFFERED FOR SALE, LEASE, OR RENTAL IN COLORADO UNLESS IT MEETS OR EXCEEDS SUCH STANDARDS.

(2) THIS SECTION DOES NOT APPLY TO A FEDERAL ENERGY OR WATER CONSERVATION STANDARD SET ASIDE BY A COURT UPON THE PETITION OF A PERSON THAT WILL BE ADVERSELY AFFECTED BY THE STANDARD, AS PROVIDED IN 42 U.S.C. SEC. 6306 (b).

6-7.5-108. Utility programs during transition period.

(1) SHOULD ONE OR MORE PRODUCTS DESCRIBED IN THIS ARTICLE 7.5 BE SUBJECT TO WITHDRAWAL, REPEAL, OR OTHER ACTIONS THAT DECLARE A FEDERAL STANDARD INVALID AS DESCRIBED IN SECTION 6-7.5-107, THE PUBLIC UTILITIES COMMISSION SHALL PERMIT A THREE-YEAR PHASEOUT FOR A UTILITY OPERATING ENERGY EFFICIENCY PROGRAMS THAT CREATE INCENTIVES FOR OR OTHERWISE ENCOURAGE THE USE OF HIGH-EFFICIENCY VERSIONS OF THE AFFECTED PRODUCTS. THIS PHASEOUT SHALL COMMENCE ON OR AFTER THE DATE SPECIFIED IN SECTION 6-7.5-105; SHALL APPLY ONLY TO ENERGY SAVINGS THAT WILL BE MANDATED UNDER THIS ARTICLE 7.5; SHALL OCCUR IN EQUAL REDUCTIONS FOR EACH TRANSITION YEAR; AND MUST PERMIT AN ORDERLY ADJUSTMENT OF THE APPLIANCE OR LIGHTING MARKET TO ENSURE THAT RESIDENTS AND BUSINESSES IN COLORADO ARE NOT NEGATIVELY AFFECTED BY CHANGES IN PRODUCT SELECTION, BUSINESS PRACTICES, AND ENERGY EFFICIENCY PROGRAM OPPORTUNITIES RELATED TO THE AFFECTED APPLIANCES OR LIGHTING PRODUCTS.

(2) FOR PRODUCTS LISTED IN THIS ARTICLE 7.5 THAT ARE NOT SUBJECT TO WITHDRAWAL OR REPEAL, THE PUBLIC UTILITIES COMMISSION SHALL ALLOW AT LEAST A ONE-YEAR TRANSITION FOR UTILITY-SPONSORED ENERGY EFFICIENCY PROGRAMS STARTING ON OR AFTER THE DATE SPECIFIED IN SECTION 6-7.5-105.

6-7.5-109. Testing, certification, labeling, and enforcement - rules. (1) UNLESS A PRODUCT APPEARS IN A PUBLIC DATABASE OF COMPLIANT PRODUCTS MAINTAINED BY OTHER STATES OR FEDERAL

AGENCIES WITH EQUIVALENT OR MORE STRINGENT EFFICIENCY STANDARDS, THE MANUFACTURERS OF PRODUCTS COVERED BY THIS ARTICLE 7.5 SHALL DEMONSTRATE THAT THE PRODUCTS COMPLY WITH THIS ARTICLE 7.5 BY DOING ANY ONE OR MORE OF THE FOLLOWING:

(a) SUBMITTING TEST SAMPLE RESULTS TO THE EXECUTIVE DIRECTOR, USING TEST METHODS AND PROCEDURES ADOPTED PURSUANT TO THIS ARTICLE 7.5;

(b) AFFIXING A MARK, LABEL, OR TAG TO THE PRODUCT AND PACKAGING AT THE TIME OF SALE OR INSTALLATION THAT DEMONSTRATES COMPLIANCE WITH OTHER STATE OR FEDERAL AGENCIES THAT HAVE EQUIVALENT OR MORE STRINGENT EFFICIENCY STANDARDS; OR

(c) SUBMITTING SUCH OTHER PROOF AS THE EXECUTIVE DIRECTOR MAY DEEM APPROPRIATE TO SHOW THAT THE PRODUCT COMPLIES WITH EQUIVALENT OR MORE STRINGENT EFFICIENCY STANDARDS ADOPTED BY OTHER STATES OR FEDERAL AGENCIES.

(2) THE EXECUTIVE DIRECTOR MAY ADOPT RULES AS NECESSARY TO ENSURE THE PROPER IMPLEMENTATION AND ENFORCEMENT OF THIS ARTICLE 7.5.

6-7.5-110. Penalties - civil action by attorney general. (1) A PERSON SHALL NOT SELL OR OFFER TO SELL ANY NEW CONSUMER PRODUCT THAT IS REQUIRED TO MEET A STANDARD ESTABLISHED IN THIS ARTICLE 7.5 BUT THAT THE PERSON KNOWS DOES NOT MEET THAT STANDARD.

(2) WHENEVER THE ATTORNEY GENERAL HAS PROBABLE CAUSE TO BELIEVE THAT ANY PERSON OR GROUP OF PERSONS HAS VIOLATED OR CAUSED ANOTHER TO VIOLATE SUBSECTION (1) OF THIS SECTION, THE ATTORNEY GENERAL MAY BRING A CIVIL ACTION ON BEHALF OF THE STATE TO SEEK THE IMPOSITION OF CIVIL PENALTIES AS FOLLOWS:

(a) ANY PERSON WHO VIOLATES OR CAUSES ANOTHER TO VIOLATE SUBSECTION (1) OF THIS SECTION SHALL FORFEIT AND PAY TO THE GENERAL FUND OF THIS STATE A CIVIL PENALTY OF NOT MORE THAN TWO THOUSAND DOLLARS FOR EACH SUCH VIOLATION. FOR PURPOSES OF THIS SUBSECTION (2)(a), A VIOLATION CONSTITUTES A SEPARATE VIOLATION WITH RESPECT TO EACH CONSUMER OR TRANSACTION INVOLVED; EXCEPT THAT THE MAXIMUM

CIVIL PENALTY SHALL NOT EXCEED FIVE HUNDRED THOUSAND DOLLARS FOR ANY RELATED SERIES OF VIOLATIONS.

(b) ANY PERSON WHO VIOLATES OR CAUSES ANOTHER TO VIOLATE ANY PROVISION OF THIS ARTICLE 7.5, WHERE SUCH VIOLATION WAS COMMITTED AGAINST AN ELDERLY PERSON, SHALL FORFEIT AND PAY TO THE GENERAL FUND OF THE STATE A CIVIL PENALTY OF NOT MORE THAN TEN THOUSAND DOLLARS FOR EACH SUCH VIOLATION. FOR PURPOSES OF THIS SUBSECTION (2)(b), A VIOLATION OF THIS SECTION CONSTITUTES A SEPARATE VIOLATION WITH RESPECT TO EACH ELDERLY PERSON INVOLVED.

SECTION 2. Act subject to petition - effective date. This act takes effect at 12:01 a.m. on the day following the expiration of the ninety-day period after final adjournment of the general assembly (August 2, 2019, if adjournment sine die is on May 3, 2019); except that, if a referendum petition is filed pursuant to section 1 (3) of article V of the state constitution against this act or an item, section, or part of this act within such period, then the act, item, section, or part will not take effect unless

approved by the people at the general election to be held in November 2020 and, in such case, will take effect on the date of the official declaration of the vote thereon by the governor.



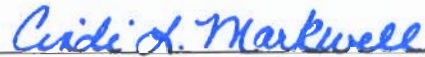
KC Becker
SPEAKER OF THE HOUSE
OF REPRESENTATIVES



Leroy M. Garcia
PRESIDENT OF
THE SENATE

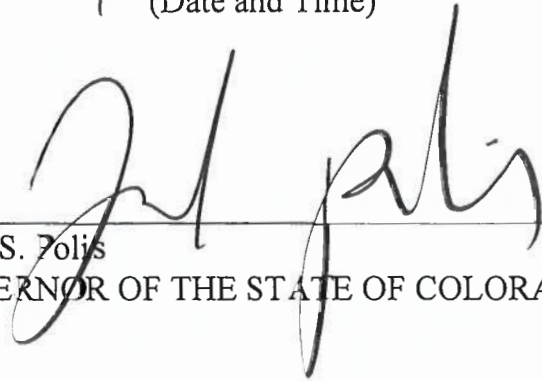


Marilyn Eddins
CHIEF CLERK OF THE HOUSE
OF REPRESENTATIVES



Cindi L. Markwell
SECRETARY OF
THE SENATE

APPROVED May 20, 2019 at 9:42 am
(Date and Time)



Jared S. Polis
GOVERNOR OF THE STATE OF COLORADO

DOCKETED	
Docket Number:	19-AAER-01
Project Title:	Spray Sprinkler Bodies
TN #:	228764
Document Title:	Rain Bird Corporation Comment Proposed Regulatory Language Spray Sprinkler Bodies
Description:	N/A
Filer:	System
Organization:	Rain Bird Corporation
Submitter Role:	Public
Submission Date:	6/17/2019 12:02:01 PM
Docketed Date:	6/17/2019

Comment Received From: Rain Bird Corporation
Submitted On: 6/17/2019
Docket Number: 19-AAER-01

**Rain Bird Corporation Comment Proposed Regulatory Language: Spray
Sprinkler Bodies “ 19-AAER-01**

Please accept Rain Bird Corporation's attached comment.

Additional submitted attachment is included below.



June 17, 2019

California Energy Commission

**Rain Bird Corporation Comment
Proposed Regulatory Language: Spray Sprinkler Bodies – 19-AAER-01**

Rain Bird Corporation (Rain Bird), a California corporation based in Azusa, California, is a leading global manufacturer of irrigation products. From its humble beginnings in 1933 when a Glendora, California citrus farmer invented the impact sprinkler in order to more efficiently use his limited supply of irrigation water, Rain Bird has designed and manufactured high efficiency irrigation products sold around the world.

Rain Bird supports California Energy Commission’s (CEC) proposed regulatory language mandating pressure regulation devices in spray sprinkler bodies in California, a feature Rain Bird introduced to the industry in spray sprinkler bodies in 1988. Rain Bird agrees with CEC that requiring pressure regulation devices in spray sprinkler bodies will achieve the CEC’s goals of saving both energy and water on behalf of Californians while also supporting The Intelligent Use of Water®, a long-standing Rain Bird philosophy. As a leader in landscape irrigation, Rain Bird stands prepared to meet the proposed regulatory requirements for California.

F1

Rain Bird also acknowledges and appreciates the changes made by CEC in testing and reporting requirements in the current proposed regulatory language from the requirements in the original October 2018 proposed regulatory language. The change to harmonize with the US Environmental Protection Agency WaterSense testing methodology is especially beneficial and appreciated.

F2

In addition to its support, Rain Bird respectfully requests changes to the proposed regulatory language, changes which will ensure it will not confuse consumers or place undue burden on industry. Rain Bird strongly suggests and highly prefers CEC revert back to the January proposed language regarding testing and reporting of results and additionally require reporting only regulation pressure and maximum operation pressure. Perhaps this change would not cause a delay in the regulatory process since we presume it has already been reviewed and vetted by CEC staff.

F3

The California Energy Commission January proposed regulatory language below is indicated by single underline and Rain Bird’s recommended revisions to the January version of the CEC proposal are indicated by double underline for addition and ~~double strikethrough~~ for deletions.

Section 1604. Test Methods for Specific Appliances.

... [skipping (a) through (w)]

(x) Reserved.

(y) Landscape Irrigation Equipment.

(1) Spray Sprinkler Bodies and Spray Sprinklers.

(A) There is no test method for a spray sprinkler or spray sprinkler body.

...

Section 1605.1. Federal and State Standards for Federally Regulated Appliances.

...[skipping (a) through (w)]

(x) Reserved.

(y) Landscape Irrigation Equipment.

See section 1605.3 (y) for water efficiency standards for landscape irrigation equipment.

...[skipping the rest of section 1605.1]

Section 1605.3. State Standards for Non-Federally Regulated Appliances.

...[skipping (a) through (w)]

(x) Reserved.

(y) Landscape Irrigation Equipment.

(1) Spray Sprinkler Bodies and Spray Sprinklers.

(A) A spray sprinkler body manufactured on or after ~~July~~October 1, 2020, shall be certified to the U.S. Environmental Protection Agency as conforming to the Agency's WaterSense® Specification for Spray Sprinkler Bodies, and shall maintain such certification.

~~(B) A spray sprinkler manufactured on or after July 1, 2020, shall contain a spray sprinkler body certified to the U.S. Environmental Protection Agency as conforming to the Agency's WaterSense® Specification for Spray Sprinkler Bodies, and shall maintain such certification.~~

Section 1606. Filing by Manufacturers; Listing of Appliances in ~~Database~~MAEDbS.

(a) Filing of Statements.

...

(3) Testing and Performance Information.

(A) A statement that the appliance has been tested in accordance with all applicable requirements of sections 1603 and 1604 of this Article. If section 1604 of this Article provides more than one test method that may be used, the manufacturer shall identify which method was used.

EXCEPTION 1 to Section 1606 (a)(3)(A) of this Article:

For spray sprinkler bodies, in lieu of the statement required in section 1606(a)(3)(A) of this Article, a statement that the appliance is certified to the U.S. Environmental Protection Agency as conforming to the Agency's WaterSense® Specification for Spray Sprinkler Bodies.

~~EXCEPTION 2 to Section 1606 (a)(3)(A) of this Article:~~

~~For spray sprinklers, in lieu of the statement required in section 1606(a)(3)(A) of this Article, a statement that the appliance contains a spray sprinkler body that is certified to the U.S. Environmental Protection Agency as conforming to the Agency's WaterSense® Specification for Spray Sprinkler Bodies.~~

...

**Table X
Data Submittal Requirements**

Appliance	Required Information	Permissible Answers
All Appliances	* <i>Manufacturer's Name</i>	
	* <i>Brand Name</i>	
	* <i>Model Number</i>	
	<i>Date model to be displayed</i>	
	<i>Regulatory Status</i>	<i>Federally-regulated consumer product, federally-regulated commercial and industrial equipment, non-federally-regulated</i>

{...skipping sections A-W of Table X} ...

Appliance	Required Information	Permissible Answers
<u>X</u> <u>Y</u> <i>Reserved Landscape Irrigation Equipment</i>	<u>Landscape Irrigation Equipment Type</u>	<u>Spray sprinkler body</u> , spray sprinkler
	<u>Spray sprinkler body certified to the U.S. Environmental Protection Agency as conforming to the Agency's WaterSense® Specification for Spray Sprinkler Bodies</u>	<u>True, false</u>
	<u>Model number of spray sprinkler body contained within the spray sprinkler (spray sprinkler only)</u>	
	<u>Regulation pressure (psi)</u>	
	<u>Maximum operating pressure (psi)</u>	

...

Section 1607 Marking of Appliances.

...[skipping (a) through (b)]

(c) Exceptions to Section 1607(b).

...[skipping (first sentence through (1)]

(2) For lamps, and spray sprinkler bodies, ~~and spray sprinklers~~, the information required by Section 1607(b) shall be permanently, legibly, and conspicuously displayed on an accessible place on each unit, on the unit's packaging, or, where the unit is contained in a group of several units in a single package, on the packaging of the group.

...[skipping (c)(3)]

Rain Bird believes the requirement to declare WaterSense certification and report only the regulation pressure and maximum operating pressure provides the following consumer and industry benefits:

1. Consumer confusion would be greatly reduced or eliminated regarding the quality of performance of spray sprinkler bodies. For instance, the latest proposed regulatory language requires the minimum outlet pressure to be no less than two-thirds (67%) of the regulation pressure. For a sprinkler spray head regulating outlet water pressure to 30 psi, this results in a minimum outlet pressure of 20 psi. If a manufacturer reports a value of 20 psi, this meets the requirement. However, it is unclear to the consumer whether a result of 30 is better. Since this criteria is a minimum, does that infer the highest number reported is best? Since consumers do not realize all pressures between 20 and 30 psi are somewhat equal, this data may confuse and mislead them. The other two data points Rain Bird recommends to be eliminated from reporting requirements have similar consumer confusion consequences.

F4

The WaterSense program requires third-party testing and verification of spray sprinkler body pressure regulation performance using the criteria in the proposed regulatory language which Rain Bird recommends for elimination. Including it in the proposed regulatory language is redundant if CEC agrees to require WaterSense certification.

F5

The WaterSense program, through expert third party testers, analyzes the data and determines whether or not the tested product meets the WaterSense criteria. WaterSense then authorizes the use of the WaterSense label for products which meet those criteria. Consumers get a simple, clear indication of the performance of the product and are not confused by arcane information that is difficult for them to interpret.

F6

Providing only regulation pressure and maximum operating pressure as Rain Bird recommends provides information easy for consumers to use and understand. Reporting the balance of information in the current proposed regulatory language will confuse and perhaps mislead consumers.

F7

2. The current proposed regulatory language requires initial reporting and maintenance of test data for every stock keeping unit (SKU) to be sold. The testing burden of each SKU to be sold is significantly higher compared to the testing required to qualify for the WaterSense label. The staff time and operating expense required to provide and maintain this amount of data is burdensome to manufacturers, represents a significant increase over the requirements in the January proposed regulatory language and provides little or no consumer benefit.

F8

3. Requiring WaterSense compliance only has the additional industry benefit of setting a precedent for other states which may follow California's leadership in this area. This may tend to harmonize state by state requirements and prevent a national patchwork of individual state requirements. If California sets its own testing/reporting requirements, other states may do the same. Individual state requirements that are all different to some degree will collectively result in an onerous burden on industry. California's leadership in this area is important and influential.

F9

Rain Bird believes that the consumer is well served by reliance on the WaterSense program as proposed in the January proposed regulatory language and reporting of regulation pressure and maximum operating pressure. It also relieves industry of low value, unnecessary burden. For

F10

these reasons, Rain Bird respectfully requests CEC make these changes. Rain Bird hopes this requested change will not result in a delay in the regulatory process.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ron Wolfarth". The signature is fluid and cursive, with a long horizontal stroke at the end.

Ron Wolfarth
Corporate Communications Manager

Rain Bird Corporation
6991 East Southpoint Road
Tucson, AZ 85756

(520) 741-6539 Office
(520) 907-0682 Cell
rwolfarth@rainbird.com

DOCKETED	
Docket Number:	19-AAER-01
Project Title:	Spray Sprinkler Bodies
TN #:	228799
Document Title:	Transcript of 06-18-2019 Public Hearing
Description:	N/A
Filer:	Cody Goldthrite
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	6/20/2019 9:41:00 AM
Docketed Date:	6/20/2019

CALIFORNIA ENERGY COMMISSION

In the Matter of:

Spray Sprinkler Bodies) Docket No. 19-AAER-01

PUBLIC HEARING

CALIFORNIA ENERGY COMMISSION
CEC BUILDING, IMBRECHT HEARING ROOM
1516 9TH STREET
SACRAMENTO, CALIFORNIA

TUESDAY, JUNE 18, 2019

10:00 A.M.

Reported by:

Peter Petty

APPEARANCES

STAFF

David Nichols, Supervisor, Standards and Outreach Unit

Sean Steffensen, Rulemaking Lead

PUBLIC COMMENT

Mary Anderson, Pacific Gas and Electric Company

Edward Osann, Natural Resources Defense Council

AGENDA

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Presentation Sean Steffensen	7
Public Comment	23
Adjourn	30

1 to the appropriate exits and we will convene at
2 Roosevelt Park, located diagonally across the
3 street from this building.

4 This public hearing today is pursuant to
5 California Administrative Procedure Act,
6 Government Code 11346.8. No Commissioners will
7 be present. No decisions will be made.

8 Paper copies of the Initial Statement of
9 Reasons, Notice of Proposed Action, proposed
10 text, and documents incorporated by reference are
11 available for review, public comment on proposed
12 regulatory language and proposed Negative
13 Declaration.

14 This public hearing is being recorded by
15 a court reporter and on WebEx. All statements
16 today become a part of public record.

17 Staff finds that the proposed spray
18 sprinkler body standards are technically
19 feasible, cost effective to the customers. Staff
20 will consider comments from today and from the
21 public comment period. Staff will propose 15-day
22 language if any changes are proposed. Staff will
23 seek adoption at a future Commission business
24 date.

25 We welcome public comments in person and

1 online. If you are here in person, please step up
2 to the podium and the microphone. Please push
3 the button so the microphone turns green, that
4 way you're live. We ask that you also provide a
5 sign-in, and for the court reporter, a business
6 card and name the affiliation of the organization
7 you're with. A copy of your comments is
8 appreciated but it is not necessary.

9 For those of you that are participating
10 by WebEx, we ask that you use the raise-hand
11 feature, Staff will call upon you, or you may
12 type a comment into the chat box and it will be
13 read into the record.

14 Phone-only participants, all lines will
15 be un-muted for comment.

16 I want to reiterate today that this is a
17 public comment period. Staff is not allowed to
18 respond to the comments that are being made,
19 although we are happy to answer questions about
20 procedural acts that are going on right now and
21 the status of where we are.

22 At this time, I'm going to turn this over
23 to Sean Steffensen, who is our subject matter
24 expert, and Engineer for spray sprinkler bodies.

25 Thank you, Sean.

1 MR. STEFFENSEN: Good morning. My name
2 is Sean Steffensen. I'm a Mechanical Engineer in
3 the Appliances Office here at the Energy
4 Commission. Today we are having a public hearing
5 on spray sprinkler bodies. It is Docket 19-AAER-
6 01. Information discussed today is available on
7 the Commission's website, including these
8 presentations. We will be available for comment
9 until noon today, or until everyone is finished
10 providing comments, so we will be here until noon
11 today.

12 Here is a summary of events.

13 Commission staff has sought public
14 participation at many points over the past two
15 years. We have published our analyses, held
16 workshops to discuss our results, and reviewed
17 and incorporated comments from stakeholders to
18 create the proposal as is presented today. On
19 this chart, we are nearing the end at the green
20 box. Thank you for your participation.

21 Here is the rulemaking timeline. We have
22 provided a Standardized Regulatory Impact
23 Assessment to the California Department of
24 Finance on November 20th, 2018. We posted the
25 rulemaking documents at the end of April and

1 included the Notice of Proposed Action, the
2 Initial Statement of Reasons, and the proposed
3 regulatory language on April 26th, 2019. We
4 posted the California Environmental Quality Act,
5 or CEQA, the initial study and proposed Negative
6 Declaration at the beginning of May.

7 There was a 45-day comment period on the
8 rulemaking documents and a 30-day public comment
9 period on the CEQA documents. The comment
10 periods ended yesterday on June 17th.

11 We are at a public hearing today. On
12 August 14th, Staff will present this proposal and
13 any proposed changes for the adoption at the
14 Energy Commission business meeting. We'll also
15 review any comments that we've received. The
16 proposed effective date is October 1st, 2020.

17 Staff has prepared an Initial Study of
18 Environmental Effects of the proposed statewide
19 minimum efficiency levels for spray sprinkler
20 bodies. Staff findings were that the proposed
21 standards would reduce future energy use by
22 reducing the water that must be pumped to provide
23 landscape irrigation. There is no significant
24 change to the materials or manufacturing for the
25 spray sprinkler bodies. The product lifetime

1 will be unchanged.

2 Because of the reduced electricity use in
3 the future, there will be reduced criteria
4 pollutants, greenhouse gases, and particulates
5 from the generation of electricity by the fossil
6 fuels. The proposed standards will improve air
7 quality and result in reduced power plant
8 operation and related facility emissions in
9 California as compared to no standards due to the
10 reduced need to pump water to meet landscape
11 irrigation needs.

12 The proposed standards will reduce
13 greenhouse gas emissions, reduce the consumption
14 associated with similar reduction, due to the
15 reduced water pumping. The proposed standards
16 will have no impacts on the hazards and hazardous
17 materials. And the proposed regulations may lead
18 to an increased usage of metals or plastics
19 already used in spray sprinkler bodies. The
20 proposed regulations do not alter the way in
21 which these materials are disposed.

22 Staff made a finding of no significance,
23 meaning the proposed regulations do not have any
24 potential for adverse environmental impacts.

25 The written comment period was Monday,

1 June 17th. No comments were received on this
2 topic.

3 Staff will recommend that the Commission
4 adopt the proposed Negative Declaration.

5 So why are we here? Here are some words
6 from our Governor, Gavin Newsom.

7 "Our drought was a wake-up call to the
8 impacts of climate change and the immediate
9 need to rethink the way we use water. We've
10 got to get a lot smarter about how we store
11 and utilize this resource to ensure that our
12 economy, communities, and natural places can
13 all thrive."

14 In May 2016, Governor Brown signed an
15 executive order to instruct state agencies to
16 help Californians adopt permanent changes to use
17 water more wisely. State agencies came together
18 to work together towards this goal. We documented
19 our resolve and future actions through a final
20 report to the governor. I'll read the first
21 paragraph of the final report to provide
22 background for our proposal.

23 "The past five years have brought both
24 historic drought and flooding to California,
25 a reflection of the fact that California

1 experiences the most extreme variability in
2 yearly precipitation in the continental
3 United States. The variability marks
4 California's water resources, not just year
5 to year, but also season and location. Our
6 water systems routinely move water hundreds
7 of miles to serve large cities and immense
8 agricultural productivity but also must help
9 to sustain ecologically valuable river and
10 estuary systems.

11 "Our population of nearly 40 million people
12 is expected to grow and climate change is
13 expected to bring rising sea levels, reduce
14 snowpack, and alter precipitation patterns
15 that will affect our ability to maintain
16 water supplies and wildlife habitat.

17 Widespread careful use of water will help us
18 cope, no matter how conditions change. We
19 must always be prepared for extreme
20 fluctuations and use water wisely, eliminate
21 waste, strengthen local drought resiliency,
22 and improve agricultural water use efficiency
23 and drought planning."

24 The graph shown on this slide shows the
25 drought conditions in California over the last 19

1 years. Although we've had a very wet winter,
2 which is shown to the left-hand side of the
3 graph, we need to prepare for the next drought.
4 Widespread careful use of water will help us
5 cope, no matter how conditions change.

6 So one solution to improve the water
7 efficiency in California is -- would be to --
8 sorry, I'm off -- one possible solution would be
9 to eliminate or sharply reduce the water applied
10 to our landscapes, but landscapes are important
11 and serve a vital role in our lives. Staff's
12 proposal will maintain the vibrancy of our
13 landscapes by improving the efficiency of the way
14 water is applied.

15 Improving the efficiency of the landscape
16 irrigation represents an opportunity to save
17 water in California. Landscape irrigation in
18 urban areas in California represents an
19 opportunity to save water in California.
20 Landscape irrigation in urban areas in California
21 consumes more than 1.1 trillion gallons of water
22 per year.

23 Irrigation losses occur due to a variety
24 of reasons. Over-irrigation, excessive water
25 pressure, and leakage during non-operation

1 contribute to the inefficient irrigation of
2 landscapes. The water is lost as it runs off the
3 landscape, evaporates into the air, or drains
4 beneath the reach of the plants' roots, as shown
5 in this figure. The losses may be significant,
6 such as in the case of over-irrigation where
7 Californians on average provide 50 percent more
8 water than is needed. Widespread careful use of
9 water will help us cope, no matter how conditions
10 may change.

11 The staff proposal examines an
12 opportunity to increase the water efficiency of
13 the spray sprinkler body through pressure
14 regulation. Pressure regulation addresses the
15 issue of excessive water pressure by maintaining
16 the optimum flow from the sprinkler, regardless
17 of the water pressure. By eliminating
18 excessively high water flow, over-irrigation will
19 also be addressed.

20 The pressure regulating standard will be
21 mandatory for all spray sprinkler bodies sold or
22 offered for sale in California. The minimum
23 performance level and test method will be
24 identical to the U.S. Environmental Protection
25 Agency Water Specifications for Spray Sprinkler

1 Bodies Version 1.0. The proposal will
2 requirement manufacturers to certify to the
3 Commission the spray sprinkler bodies and also
4 mark them.

5 Some background on the products.

6 The term spray sprinkler body is not a
7 lay term. As many of us refer to the picture
8 shown as a sprinkler, a sprinkler head or a spray
9 head, the use of the spray sprinkler body term is
10 to embrace the language of the landscape
11 professional and use a precise term for a
12 specific product. I have a slide later that
13 shows how the term is used to define the scope of
14 the rulemaking.

15 A spray sprinkler body may be sold as a
16 sprinkler body without the nozzle or it may be
17 sold with the nozzle. Typically, a landscape
18 professional will purchase the body and nozzle --
19 sorry. Typically, a landscape professional will
20 purchase the body and nozzle separately and pair
21 them in the field, while a homeowner will
22 purchase the body and nozzle assembled. Both
23 ways of offering for sale are considered within
24 the scope of the proposed regulation. The spray
25 sprinkler body may be sold plain or with various

1 options.

2 A pressure regulator will control the
3 outward pressure while a drain check valve will
4 prevent the irrigation system from draining
5 through the irrigation system while the system is
6 off.

7 At right are a couple facts regarding the
8 spray sprinkler bodies.

9 The price varies based upon what options
10 are included.

11 There are a lot of sprinklers in
12 California; Staff estimates over 300 million.
13 The proposed scope includes all spray sprinkler
14 bodies.

15 What is a spray sprinkler body? Here are
16 some proposed definitions.

17 A spray sprinkler body means the exterior
18 case or shell of a sprinkler incorporating a
19 means of connection to the piping system designed
20 to convey water to a nozzle or orifice. A spray
21 sprinkler body means a sprinkler body that does
22 not contain components to drive the rotation of
23 the nozzle or orifice during operation and lacks
24 an integral control valve. This term includes a
25 spray sprinkler body that is a component of a

1 spray sprinkler.

2 A spray sprinkler means a device used to
3 irrigate landscape that consists of a spray
4 sprinkler body, any nozzle or orifice, and
5 discharges water through the air at a minimum
6 flow rate of 0.5 gallons per minute when operated
7 at an inlet pressure of 30 pounds per square inch
8 or more with the largest area of coverage
9 available for the nozzle series using a full
10 circle pattern.

11 Staff shows several examples of what is
12 in scope which is above the green line and what
13 is out of scope which is below the green line.
14 The items that in scope from the far left is a
15 pop-up spray sprinkler body with a retraction
16 spring, also, a multi-stream/multi-trajectory
17 spray sprinkler body, a pop-up without a
18 retraction spring, that's the green and brass one
19 shown in the center, as well as flush-mount and
20 non-pop-up sprinklers.

21 Staff believes that these devices will
22 benefit from pressure regulation because each
23 uses a spray nozzle. Staff proposes to exclude
24 rotor sprinklers which are shown below, valve-in-
25 head sprinklers, and hose-end sprinklers from the

1 scope.

2 Staff proposes to use Appendix B of the
3 Water Specification for Spray Sprinkler Bodies.
4 The USEPA went through a multi-year consensus-
5 seeking process with stakeholders and verified
6 the performance of the test method through
7 university testing. Staff propose the test
8 requirements will be identical to water specs.
9 California is not recommending any modifications
10 to the test procedure.

11 Shown on this slide is a picture of the
12 test setup by the US EPA. Staff proposes three
13 mandatory performance requirements identical to
14 the water spray sprinkler body specification.
15 The maximum flow rate at any tested pressure
16 ensures that not any of the tested flow rates are
17 too high. The average flow rate across all
18 tested pressures ensures overall performance of
19 the device. The average outlet pressure at the
20 initial calibration point ensures that the device
21 does not overcompensate and can provide a minimum
22 outlet pressure to meet the minimum pressure
23 requirements of the nozzle.

24 Staff's proposal will set mandatory
25 certification and marking requirements for spray

1 sprinkler bodies sold or offered for sale in
2 California. All spray sprinkler bodies will be
3 required to be certified and appear in the
4 Commission's Appliance Efficiency Database. I
5 have listed the markings that must appear either
6 on the unit or the unit's packaging.

7 Additionally, there is a requirement to
8 apply a mark that will be visible after
9 installation to show pressure regulation. A
10 marking like this could support compliance
11 verification, say in the instance of a local
12 agency that has adopted requirements from the
13 Model Water Efficiency Landscape Ordinance for
14 Pressure Regulation.

15 Technical feasibility means that products
16 are technologically capable of meeting the
17 proposed standard by the effective date. The
18 University of Florida tested several brands of
19 spray sprinkler bodies with the WaterSense Spray
20 Sprinkler Body Test Method. The results show
21 that spray sprinkler bodies are available now
22 that will meet the proposed standard.

23 In addition, the US EPA's WaterSense
24 website lists over 100 models from 5
25 manufacturers as certified to meet the WaterSense

1 specification. The variety of products available
2 from multiple manufacturers confirms compliant
3 product availability and a lack of any
4 intellectual property barriers that could
5 otherwise prevent competition.

6 Staff applied the standard saving
7 methodology used on previous rulemakings to
8 calculate savings on a consumer and statewide
9 level. Efficiency of current compliant products
10 are held at the same level while noncompliant
11 products are moved to exactly meet the minimum
12 standard. Staff assumed product stock, duty
13 cycles, and product lifetimes as provided by
14 stakeholders and through Staff research.

15 How did Staff calculate the 18 percent
16 saving's rate as shown on this slide?

17 The plot shows flow rate versus input
18 pressure based upon data collected by the
19 University of Florida. As input pressure
20 increases the flow increases. This is the blue
21 line.

22 The orange line represents the proposed
23 standard where pressure regulation controls the
24 flow rate regardless of input pressure. The 18
25 percent savings, the green arrow, is the

1 difference in flow rates between the orange and
2 blue lines at a pressure that represents the
3 average statewide conditions for a spray
4 sprinkler. Calculation details are shown in
5 Appendix A and Appendix B of the Final Staff
6 Report.

7 Cost effectiveness is a measure of the
8 benefits to the consumers compared to the cost of
9 the consumer due to requiring the appliance to be
10 more water or energy efficient. The benefit to
11 the consumer must exceed the cost to the consumer
12 for the proposed standard to be cost effective.

13 To determine cost effectiveness, Staff
14 must determine the value of the water or energy
15 saved, the effect of the standard on the
16 usefulness of the device, and the lifecycle costs
17 to the consumer of the efficient device.

18 The proposal is cost effective. A
19 compliant spray sprinkler body is estimated to
20 cost \$4.68 more than a noncompliant spray
21 sprinkler body. And then net present value of
22 the savings over a ten-year lifetime of the
23 product is \$27.23. Therefore, the lifecycle
24 benefit is \$22.55. The benefit-to-cost ratio is
25 about six-to-one.

1 The proposal will deliver significant
2 water and energy savings to California. The
3 tables estimate for our first year, in-stock turn
4 will turn over savings. Electricity savings
5 comes from less water pumped by the water
6 utilities to supply water to landscapes. The
7 proposal will deliver nearly \$900 million of cost
8 effective savings to consumers through reduced
9 water utility charges.

10 How much is 152 billion gallons of
11 savings from this proposal?

12 The illustration compares the savings
13 from the proposal versus the recent Energy
14 Commission Water Standards. The proposal will
15 save more water than the 2015 Water Efficiency
16 Standards for Toilets, Faucets, Urinals and
17 Showerheads.

18 Overall, great progress have been made to
19 reduce urban water use with the opportunity for
20 much more. These savings represent over nine
21 percent of the total urban water use, showing
22 significant strides to reduce water use through
23 efficiency.

24 How much water could be saved by this
25 proposal? It's roughly equal to all the water

1 used to grow lettuce in California; that's a lot
2 of green.

3 Washington State, Vermont, Hawaii and
4 Colorado have adopted similar spray sprinkler
5 body standards. Maine, Massachusetts, Rhode
6 Island and Connecticut have proposed similar
7 standards. California is poised to become the
8 fifth state to adopt water-saving spray sprinkler
9 body standards.

10 So in conclusion, Staff finds that the
11 proposed standards are technically feasible and
12 cost effective to the consumer over the lifetime
13 of the appliance.

14 Staff will consider comments from today
15 and from the public comment period. Staff will
16 publish 15-day language if any changes are
17 proposed. Staff will seek adoption at a future
18 Commission business meeting.

19 At this point, we are ready to move to
20 the public comment portion of the hearing. We
21 will start with people who are in the room, if
22 you want to, come to the microphone and state
23 your name and affiliation for the court reporter.
24 If you could also give them a business card, that
25 would be great. A copy of your comments is

1 appreciated but not required.

2 I guess, could I see a show of hands of
3 who would like to make a comment? Okay.

4 Could I call upon Mary?

5 MS. ANDERSON: Hi. This is Mary Anderson
6 from Pacific Gas and Electric on behalf of the
7 California IOUs.

8 The California IOU CASE Team applauds the
9 Energy Commission's effort to adopt the standard
10 which will provide massive benefits to the
11 reliability of California's water supply, climate
12 protection, and energy and cost savings for
13 California ratepayers. We also very much
14 appreciate the extensive efforts of the Energy
15 Commission to encourage stakeholder engagement,
16 and the irrigation associations and other
17 stakeholders highly collaborative efforts to
18 adopt this standard.

19 The California IOU Cast Team has offered
20 a few minor suggestions in our written comments
21 and strongly support the proposed standard with
22 or without further tweaks. The Statewide CASE
23 Team agrees with the Energy Commission's proposed
24 approach of incorporating the WaterSense Spray
25 Sprinkler Body Test Method by reference, adopting

G1

G2

1 a performance level in harmony with Version 1.0
2 of the WaterSense Specification for Spray
3 Sprinkler Bodies, and adopting specific
4 compliance requirements necessary for adopting a
5 Title 24 standard. The requirements and
6 compliance process are very clear.

7 Once again, we appreciate the Energy
8 Commission's efforts and we look forward to
9 continuing on this process and adopting this
10 standard.

11 Thank you.

12 MR. STEFFENSEN: Thank you, Mary.

13 May I call Ed Osann to the podium?

14 MR. OSANN: Good morning. My name is
15 Edward Osann, spelled O-S-A-N-N. I'm the
16 Director of Water Conservation and Efficiency for
17 the Natural Resources Defense Council.

18 NRDC strongly supports the standard for
19 spray sprinkler bodies as proposed in the 45-day
20 language published by the Commission. Upon
21 adoption, this rule will be one of the most
22 important and consequential water efficiency
23 measures ever undertaken by any state.

24 According to Staff estimates, this
25 standard will reduce urban water use in a normal

H1

H2

1 year by approximately five percent within ten
2 years, based on full stock turnover. Once more,
3 the standard is highly cost effective. This is a
4 remarkable achievement.

5 During the time that the Commission has
6 been considering this proposal the EPA WaterSense
7 Program has adopted a specification for SSBs, and
8 four states have adopted statewide efficiency
9 requirements for SSBs by statute, all based on
10 the WaterSense specification.

11 We support the incorporation of the
12 WaterSense performance specification and the test
13 procedure into Title 20 in a manner that allows
14 for test results to demonstrate compliance with
15 the requirements of both programs.

16 Turning to remaining outstanding issues.

17 We support the recommendations of the
18 CASE Team for refinements to the 45-day language
19 with the same proviso, that they can be
20 accomplished without significant delay. In
21 particular, section 2.3 of the utility comments
22 regarding the sampling protocol, we believe that
23 ensuring that test samples are selected from
24 different production batches, which is to say
25 date code lots, helps focus on the effectiveness

H3

H4

1 of manufacturer's Q.A./Q.C. practices.

2 It's been noted in the comments submitted
3 by industry that the technology for pressure
4 regulation has been available for some time; it's
5 not particularly new. So the real challenge in
6 providing efficient products at this point is
7 quality control. And a sampling protocol that
8 incorporates and ensures that test samples are
9 drawn from different production batches will
10 better address issues of quality control.

11 Also, section 2.4 of the utility comments
12 regarding changes of wording from percent
13 difference to percent change to better reflect
14 industry usage.

15 We urge the Commission to reject several
16 industry recommendations that would depart from
17 standard CEC reporting requirements and cede undo
18 deference to the workings of the federal
19 WaterSense Program going forward, in particular,
20 proposals that would substitute evidence of
21 WaterSense certification for reporting of test
22 results to the CEC reporting database. We find
23 the claims of undue burden and potential consumer
24 confusion to be unconvincing. If testing is done
25 the results can and should be submitted to the

H5

H6

1 CEC database. The database is a valuable
2 resource for California utilities and consumers
3 and, indeed, for other states.

4 Any proposals that would rely on
5 prospective actions to be taken by or through the
6 EPA WaterSense Program would be of concern. Some
7 commenters have offered support for the January
8 staff draft. As we noted in public comments at
9 the time, an approach that relies on prospective
10 actions of EPA and/or its contractors or
11 performance certifying bodies is vulnerable to
12 the vagaries of the federal budget process.

13 Authorizing legislation for the
14 WaterSense Program in 2018 was a welcome and
15 long-overdue step, but it does not ensure that an
16 administration will not zero-fund the program, as
17 the current administration has done, nor that
18 congress will be able to provide continuous and
19 steady funding, as was the case as recently as
20 last January.

21 Finally, these few remaining areas of
22 disagreement are important but narrow. We
23 commend the irrigation industry, the irrigation
24 association and its member companies for the
25 constructive role they have played throughout

H7

1 this proceeding and for bringing to market
2 products that will achieve enormous water and
3 energy savings for the state in the years ahead.
4 And we note the crucial role of the CASE Team in
5 providing supporting documentation for the staff
6 analysis supporting this rule.

7 We urge timely adoption of the proposed
8 rule.

9 MR. STEFFENSEN: Thank you.

10 May I check to see if anyone else in the
11 room would like to make a comment? Okay, seeing
12 none, no more comments from the room at this
13 point.

14 Let me move to comments from WebEx.
15 Please use the raise-hand feature. And you will
16 be un-muted and you could type your name in the
17 chat box and a comment or questions will be read
18 into the record. In either case, state your name
19 and affiliation. So either raise your hand or
20 place a comment into the chat box. Okay. We are
21 seeing no raised hands and we are seeing no chat
22 box comments. Just pausing in case anyone is --
23 no? Okay.

24 We will now un-mute all lines in case
25 there are participants who are audio only.

1 Please state your name and affiliation before
2 making a comment. Okay, let's -- oh.

3 All right, so hearing no comments at this
4 point, we will remain here until noon.

5 But just to move along to the next slide
6 in the presentation, Staff will review comments
7 and possibly propose the adoption of the
8 regulation and Negative Declaration at an Energy
9 Commission business meeting. This may occur on
10 August 14th beginning at 10:00 a.m. across from
11 here in the Rosenfeld Hearing Room.

12 The presentation was docketed with the
13 Energy Commission this morning and will go out on
14 the Appliance's LISTSERV and be available on the
15 Docket 19-AAER-01.

16 We'll check for any additional comments?
17 Thank you.

18 MR. NICHOLS: Thank you, Sean, for
19 working with the spray sprinkler bodies and
20 leading the regulation proposal.

21 We are going to keep the WebEx open until
22 11:00 -- I'm sorry, until 12 o'clock. If you
23 have comments you wish to make, please notify us
24 through WebEx. We will also, I believe, leave
25 the phones un-muted. If you have comment and you

1 would like to make it, it will be going into the
2 record.

3 At this time, for those that are present,
4 you're welcome to stay if you would like.
5 Otherwise, you may consider this dismissed.

6 Thank you.

7 (Off the record at 10:35 a.m.)

8 (On the record at 11:59 a.m.)

9 MR. STEFFENSEN: Sean Steffensen with the
10 California Energy Commission.

11 We are coming back to see if there are
12 any comments in the room?

13 I would like to open it up to any
14 comments on WebEx?

15 I'd like to see if there are any comments
16 through the phone lines?

17 Seeing as there are no further comments,
18 I would like to adjourn this meeting at 12
19 o'clock today.

20 Thank you.

21 (The workshop adjourned at 12:00 P.m.)

22

23

24

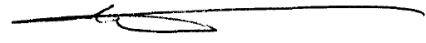
25

REPORTER' S CERTIFICATE

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 20th day of June, 2019.



PETER PETTY
CER**D-493
Notary Public

CERTIFICATE OF TRANSCRIBER

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were transcribed by me, a certified transcriber and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

I certify that the foregoing is a correct transcript, to the best of my ability, from the electronic sound recording of the proceedings in the above-entitled matter.



June 20, 2019

MARTHA L. NELSON, CERT**367