DOCKETED

Docket Number:	17-AAER-01
Project Title:	Appliance Efficiency Pre-Rulemaking for Commercial Tumble Dryers and Air Filter Labeling
TN #:	220977
Document Title:	Whirlpool Corporation Comments - Docket No. 17-AEER-01 for Commercial Tumble Dryers
Description:	N/A
Filer:	System
Organization:	Sean Southard
Submitter Role:	Public
Submission Date:	8/31/2017 9:11:17 AM
Docketed Date:	8/31/2017

Comment Received From: Sean Southard
Submitted On: 8/31/2017
Docket Number: 17-AAER-01

Whirlpool Corporation Comments - Docket No. 17-AEER-01 for Commercial Tumble Dryers

Additional submitted attachment is included below.

GLOBAL HEADQUARTERS • 2000 N. M63 – MD 3005 • BENTON HARBOR, MI 49022 • 269.923.7258

August 31, 2017

Via Email

Ryan Nelson
California Energy Commission
Efficiency Division
Appliances & Outreach & Education
docket@energy.ca.gov and Ryan.Nelson@energy.ca.gov

Re: 2017 Appliance Efficiency Pre-Rulemaking - Docket No. 17-AAER-01 for Commercial Tumble Dryers and Air Filters

Dear Mr. Nelson:

Thank you for the opportunity to comment on this draft staff report and other documents posted to Docket No. 17-AAER-01 for Commercial Tumble Dryers. We appreciate the collaboration that continues to be encouraged by the California Energy Commission (CEC) and shared between its stakeholders.

Whirlpool Corporation is the number one major appliance manufacturer in the world, with approximately $21 billion in annual sales, 93,000 employees, and 70 manufacturing and technology research centers around the world. We sell major and small appliances under brand names such as Whirlpool, Maytag, KitchenAid, Amana, and Jenn-Air. We are also one of the largest manufacturers of commercial laundry products, with commercial washers and dryers sold across coin-operated laundromat, multi-family, and on-premise laundry segments. We sell commercial washers and dryers under the Whirlpool, Maytag, and American Dryer Corporation (ADC) brand names, with manufacturing of our commercial dryers in both Marion, OH, and Fall River, MA; where we employ nearly 2,800 people.

As a company, we have a wealth of experience working with trade associations, government agencies, manufacturers, and other organizations, to collaboratively develop standards and test procedures in many countries across the world. We have been a long-time partner to the U.S. Department of Energy and CEC in the development of appliance efficiency standards and test procedures.

Given that experience, we recognize and respect the hard work and dedication of the Codes and Standards Enhancement (CASE) team, including Pacific Gas & Electric and Kannah Consulting to develop this test procedure proposal and conduct this analysis. Developing a test procedure is not an easy process and we certainly commend the effort put forth by the CASE team.

With that said, we were very disappointed in the lack of manufacturer engagement before the draft staff report was published. To my knowledge, we had not been contacted by a CEC staff member or anyone on the CASE team prior to the development of the documents on the docket, including the draft staff report, the energy efficiency test procedure, and market survey

report. Given our decades of experience in commercial laundry and in developing standards and test procedures, it was unfortunate that we were not engaged at the initial collaborative phases of developing the CASE-proposed test procedure and CEC draft staff report.

We generally support the CEC's mission to identify energy-saving opportunities for California consumers and businesses, but this needs to be balanced against the impacts on manufacturers and those California consumers and businesses for which the standards and test procedures are intended to help. To that end, we offer the below comments from the perspective of a very large and experienced appliance manufacturer and hope that you carefully consider the comments when determining how to move forward with this rulemaking.

Please also note that, as a very active member of the Association of Home Appliance Manufacturers (AHAM), the Coin Laundry Association (CLA), and the Textile Care Allied Trades Association (TCATA), Whirlpool Corporation has worked closely with them in the development of the joint comments they submitted (under separate cover) on this draft proposal. We support and echo the positions taken by these associations; particularly the specific concerns with the test procedure, commercial availability and viability of potential technology options, and impacts of the proposed testing and certification requirements to our customers and consumers. Our comments supplement those positions and address concerns we have where AHAM, CLA, or TCATA cannot take an industry position.

General Test Procedure Comments

Good test procedure development is a collaborative, transparent, and iterative process that can take several years and the involvement of a diverse group of stakeholders. Unfortunately, the development of the CASE-proposed test procedure was done behind closed doors without the involvement of manufacturers and other stakeholders.

Despite the lack of involvement, we would like to offer comments to CEC and the CASE team about the proposed test procedure. However, without available equipment in our labs, or enough time to train technicians on the test procedure, conduct the test procedure on a number of models, and analyze those results, it is impossible for us to give meaningful and thoughtful comments on the proposed test procedure.

We can only offer comments based on our expertise of the commercial laundry market and experiences developing and using other residential and commercial appliance test procedures. If CEC moves forward with the test procedure, we highly recommend the involvement of manufacturers and other stakeholders in an open and collaborative test procedure development process, such as one used by the American National Standards Institute.

Impacts of Future Minimum Energy Standards on CA Businesses and Consumers

As we mentioned above, we support CEC's mission to save energy for CA businesses and consumers, but this needs to be balanced against the impacts to those same groups. While we are aware that CEC is not proposing standards at this point in time, it has stated its intentions

for this new testing and certification requirement to eventually build a database of models for a future minimum energy standard. We believe that it is not appropriate for CEC to propose any commercial clothes dryer standards now or into the future, absent a major technological breakthrough.

Given the low number of annual shipments of commercial clothes dryers to the state of CA, we believe that there is a lack of benefits in relation to the cost of minimum energy standards. This cost would not only include the purchase premium to CA businesses (coin stores, multi-family housing owners, route operators, on-premise laundry businesses, or distributors) to purchase a more efficient product, but it would also include increased cost of use to CA consumers (many of whom are low-income, coin laundromat users) and reduced revenue and productivity for CA businesses.

As has been the case with many other residential and commercial appliances, an increase in efficiency has often corresponded to a degradation in product performance, including an increase in cycle time. When an appliance reduces its energy, it typically needs more time to do its job. Consumers may be more willing to accept an increased cycle time in residential appliances like clothes washers or dishwashers because they can do other things in or out of the home while the appliance completes a cycle. However, with commercial washers and dryers, users may be waiting inside a laundromat or laundry room longer for their load(s) to finish.

For commercial dryers, an increase in drying time may correspond not only to an increase in the total cost of using the dryer, since most dryers charge a certain amount for a set number of minutes; but also to the amount of time that the consumer spends doing their laundry. Since many of these coin laundry consumers are low-income, this increased cost of doing laundry may be unacceptable. CEC should carefully consider this potential increased cost, as well as the opportunity cost for consumers ultimately spending more time to do their laundry.

For coin-operated and multi-family dryers, CEC should also evaluate the impact of increased drying time on revenue for thousands of small business laudromats, distributors, and route operators in the state. While consumers may spend more per load to complete their laundry, these businesses may see fewer turns per day, which could correspond to less overall revenue.

For on-premise dryers, CEC should evaluate the impact of increased drying time on operator/business productivity, revenue, and other business costs. Longer drying times would mean fewer turns per day for a single machine, and could mean longer staff hours to complete their work. These dryers are designed to quickly and thoroughly dry loads. These businesses with on-premise dryers would be incredibly sensitive to any increase in drying time. They would

have to pay for additional hours these operators work and maybe even additional overtime pay. There may also be other associated costs of fewer turns per day. For example, with an increase in drying time and fewer turns per day, a hotel or health club may need to purchase additional towels to ensure that an appropriate number of clean towels are available at all times. Like any increased business cost, these costs will ultimately be passed on to the consumer.

A cost-effective energy savings potential should also not be evaluated and demonstrated on one or two models, as had been claimed in the CASE report. Conclusions about energy-savings potential or incremental cost cannot be gleaned on such a limited data set. There may be key differences between the models that are not immediately apparent to researchers or proprietary technology included on a more efficient model that are not available to other manufacturers.

We also generally do not see many of the technology options cited by the CASE team as viable in commercial dryers. Automatic termination may be a great, cost-effective, and proven technology option for residential dryers to achieve energy savings, but given the unique use cases of commercial laundry across coin laundromats, multi-family housing, and on-premise laundry, automatic termination is not a feasible option. Consumers pay for drying time in most coin-op and multi-family dryers, and automatic termination may end the cycle prematurely and result in lost money for consumers.

There is also no evidence that automatic termination used in these dryers would be effective in terminating the cycle when clothes reach a consumer-appropriate level of dryness. With this technology, it is possible that a cycle is terminated before the consumer perceives the load to be dry and the consumer either has to restart the machine and/or pay for additional drying time. For a consumer that may leave the laundromat or laundry room and come back expecting a dry load, they may be upset.

Across all commercial dryer segments, the cost of the technology will need to be carefully considered, as well as the cost of possible increased service for defective automatic termination components. This would also need to include the cost of down time while a machine is waiting to be serviced. Additionally, in large multi-load and on-premise dryers, there is no guarantee that automatic termination could be accurate with such large loads.

For technology options like improved motor efficiency, CEC should be aware that many of the motors on commercial dryers are already regulated under existing CEC and DOE regulations under the electric motor standards. Presumably, the efficiency of motor technology is already being maximized through these existing standards.

Other technologies like microwave clothes dryers, heat pump clothes dryers, heat exchangers, and modulation have not been demonstrated as commercially-viable technologies in commercial dryers. They would need to be demonstrated as safe, reliable, cost-effective, and able to maintain or enhance product performance, including drying performance and cycle time. The fact that none of these technologies have been used at a large scale in commercial dryers indicates that they may not meet that above criteria. We recommend that CEC work directly with manufacturers for any evaluation of potential technology options, including: energy savings potential, cost premiums, impacts to product performance/reliability/safety, consumer/business impacts, and commercial viability.

Proposed Test Procedure

As mentioned above, we recognize and appreciate the amount of work done by the CASE team to develop the proposed test procedure. Their analysis was thorough and they followed the correct principles to analyze repeatability, reproducibility, representativeness, and reasonableness (burden). As a manufacturer, we very much commend the consideration given to make a good test procedure that achieves all of those principles.

Given the very short time to review the proposed test procedure and the inability to use it in our labs, we cannot provide detailed feedback on the proposal based on actual lab experience. However, we can generally comment based on our experiences developing and using other residential and commercial appliance test procedures around the world, as well as our knowledge of commercial dryers.

We have many specific concerns, which are detailed in the joint association comments. Among these are the overall cost and manufacturer burden of conducting the test procedure; ambient conditions; cost of purchasing, managing, storing, and handling hundreds or thousands of pounds of test cloth; remaining moisture content (RMC) targets; and standby power measurements.

In particular, we wonder how the CASE team arrived at the proposed RMC targets. The 2% RMC used in the DOE Appendix D2 test procedure was based on extensive manufacturer data. It appears that the targets identified by the CASE team were not based on any data and were arbitrarily developed. There needs to be testing and research to identify an acceptable ending RMC.

As a manufacturer, we would like to reinforce the costs and burden of the proposed test procedure. We currently do not have the internal resources required to conduct this testing. We would need to potentially hire additional technicians to conduct the testing, train those technicians, procure and install the equipment needed to conduct the testing (scale, heating/cooling system, electrical conductivity meter, etc.), and find dedicated lab space since the testing couldn't be done in the same lab where we conduct residential dryer testing. If we

decide to do this testing at the factory, we would need to build a brand new dedicated lab space. If we do the testing at a non-factory lab, we would need to pay to ship these units across the country to the lab, which can be a significant time and cost burden for the manufacturer. CEC needs to better quantify this burden. The CEC-developed cost estimate does not accurately measure all these costs and therefore significantly underestimates the total cost of the test procedure.

This brings up the larger concern that the CASE team only did a very limited amount of testing at one or two labs to develop and use the test procedure. We would never accept a test as repeatable or reproducible with such a limited amount of testing done. Further, not all products in scope were tested, including large on-premise dryers above 120 lb ratings or small coin-operated machines. It may not be appropriate to conclude that the test procedure works across all ranges of capacities and commercial segments without a robust and representative set of models tested. We also question how the CASE team arrived at a 6 to 65 cubic ft scope for the test procedure. There appears to be no data or information provided to justify that range.

While the CASE team had believed that they had hit on all the principles of repeatability, reproducibility, representativeness, and reasonableness, we believe that there needs to be much further analysis into this. This analysis should not just take place in a single lab with the CASE team, but should happen with many other stakeholders in a collaborative and open process. Good test procedure development takes several years and significant resources from a large number of dedicated stakeholders. It often involves lab visits, witnessed testing, round robins, heavy statistical analysis once enough data is gathered, and discussion among all stakeholders on ways to improve the test procedure.

Proposed Testing and Certification Requirement

We do not think that it is appropriate for CEC to propose testing and certification requirements for commercial dryers, for the following reasons.

First, we do not think that the test procedure has adequately addressed potential issues with repeatability, reproducibility, representativeness, and reasonableness. There would need to be alignment from manufacturers and labs using the test procedure that those have all been addressed. It would not be appropriate for CEC to require using a test procedure that does not have this alignment.

Second, most of the on-premise business is custom and built-to-order. The CASE team estimated about 325 models in scope that would need testing. Whirlpool alone manufactures thousands of on-premise dryer SKUs. We recognize that the CASE team has proposed to alleviate that potential burden by proposing basic model testing, which would allow us to create a test series for a number of sales models based on the characteristics of those models. While we commend this attempt to reduce burden, we do not think it will ultimately help reduce testing and certification burden for custom-built dryers, which make up the majority of

the on-premise business. This business is not like the residential appliances business where the vast majority of the business is standard, non-custom models, and manufacturers offer a limited amount of customization (e.g., color, door handle, etc.). There is much more customization possible in the on-premise dryer business. For example, customization is possible across fuel type, capacity, reversing and non-reversing drums, and a number of other product characteristics.

We don't currently see a path to group these custom-built dryers in basic models to reduce our burden. It would not only be prohibitively expensive and nearly impossible to test thousands of SKUs to this test procedure, but it may also slow down product development, launches, and shipments to our end customer. It would also not present any helpful data to that customer if the machine is tested and certified after they designed and/or purchased the dryer.

We would ultimately be left with a choice to test and certify potentially thousands of basic models sold into the CA market, or limit customer choice in CA to a few market-specific models that we could test and certify for CA customers. This option would reduce the amount of choice that CA customers have, and may reduce or eliminate the features and functionality that they need. It may put CA businesses at a disadvantage to other states without such requirements where we can allow product customization. CEC needs to carefully consider and evaluate such an impact.

Third, CEC lacks data about the usefulness of this certification data to consumers, customers/purchasers, and utilities. Without this data, CEC can't jump to conclusions that they want this data and find it useful. CEC would need to interview or survey a statistically significant portion of these potential users of this data to establish very clearly that they would want and use this data, and that it would result in meaningful energy savings.

Fourth, CEC also lacks evidence that there is a statistically significant difference in the efficiency of models on the market today to indicate that certification data would be helpful to distinguish models by efficiency effectively for consumers. CEC would need to provide statistically significant evidence of a wide range of efficiency among models on the market. If most models are a similar efficiency, the certification data would not provide anything useful to potential customers or consumers.

Summary and Recommendation

We appreciate the opportunity to comment on the draft staff report and other documents posted in this docket for commercial clothes dryers. We want to also thank CEC again for hosting the workshop on August 3 to receive our feedback.

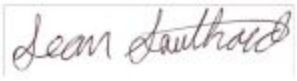
While we recognize the work that went into developing this proposed test procedure, we do not believe that it has hit the principles of repeatability, reproducibility, representativeness, and reasonableness needed to move forward. We strongly urge CEC to consider our comments and the joint association comments as they decide whether or how to move forward.

As I commented in the August 3 workshop, our recommendation is for CEC to abandon any proposal for testing and certification of commercial dryers. Given the impacts of this on manufacturers, CA businesses, and CA customers, we do not think the proposal will advance energy savings in the state without strong negative impacts on the aforementioned groups.

If CEC decides to move forward with this rulemaking, despite these documented concerns, we recommend that CEC work directly with manufacturers and other stakeholders to discuss this proposed test procedure and testing/certification requirement in more detail, impacts of this to our industry and to CA businesses and consumers, and avenues for arriving at a proposal that works for all parties.

Thank you again for your consideration and we look forward to continued collaboration. As always, please do not hesitate to ask us for any clarifications on these comments.

Sincerely,



Sean Southard
Manager, Regulatory Affairs
Whirlpool Corporation