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May 30, 2012

California Energy Commission
Attention: Docket # 12-BSTD-01
Dockets Office
1516 Ninth St, MS-4
Sacramento, CA 95814

Subject: Baltimore Aircoil Company's Response to 15-day Language for 2013 Revisions to the California Building Energy Efficiency Standards, Title 24

Dear Energy Commissioner,

Baltimore Aircoil Company (BAC) would again like to commend the California Energy Commission for leading the industry with its efforts to create standards that save our planet's valuable resources. As mentioned in my previous letter dated March 16 2012, BAC fully supports the efforts of the Commission to include evaporative condensers for the first time in the Title 24 energy standard. It is our sincere hope that the CEC's vanguard position will propel other agencies to quickly follow suit.

BAC has reviewed the proposed 15-Day Language efficiency requirements for evaporative condensers. As we stated in our comments to the 45-day language, we find them overly aggressive based on a first implementation and in light of today's available technology. Specifically, we believe the proposal to implement a minimum efficiency level of 350 Btuh/W for evaporative condensers with heat rejections greater than 8,000 MBH will be detrimental to the industry and may actually increase energy use due to an unintended market switch to less costly but lower efficiency systems. Regretfully this fact was not addressed in the CEC's consultant's response to the industry's previous comments (Doug Scott's comments dated March 30 2012).

In general, applications with refrigeration requirements of at least 8,000 MBH could be considered small to medium when discussing industrial refrigeration facilities. Therefore, applications of this size and greater are positioned within the core portion of all of BAC's industrial evaporative condenser product lines. The vast majority of our condenser sales into the industry are of this size or greater in terms of capacity. It is therefore important to understand that these new requirements for systems greater than



8,000 MBH will affect the industry significantly – an industry which BAC estimates to be approximately \$164 billion in the state of California alone when considering wholesalers, processors, storage facilities, and retail distributors (per IBIS International Industry Reports). BAC supports this industry from our manufacturing facility located in Madera, California.

In terms of scope, the 350 Btuh/W requirement would have the immediate effect of eliminating more than 50% of BAC's and like competitors' current models greater than the 8,000 MBH stated capacity. It would be difficult to overstate the significance of such a wide-ranging mandated change on the refrigeration industry. The first cost of evaporative condenser based systems would increase significantly while the freedom of choice for system designers would be severely restricted by such a requirement. Efforts underway in the industry to foster an independent, third party certification program for evaporative condensers, which has proven extremely successful for open and closed circuit cooling towers, would also be jeopardized. In addition, BAC and other industry firms have spent substantial capital in the construction and operation of dedicated refrigeration laboratories that can test full-scale condensers in support of this effort as well as the development of innovative new designs.

By comparison, a brief review of the product offerings of a popular air cooled condenser supplier showed that their least efficient type of air cooled condensers (1140 rpm, 1.5 hp motors) would only need to eliminate approximately 10% of the models due to the implementation of the proposed standard of 65 Btuh/W. I make this comparison not to position one technology versus the other, but rather to show the disparity that the 2013 standards create between differing parts of the refrigeration industry.

Besides restraining trade, such a limitation on evaporative condensers will likely lead to a greater use of less energy efficient systems on strictly a first cost basis, which runs counter to the CEC's goal to save energy. Indeed, a system equipped with the least efficient evaporative condenser available today will have a lower overall energy consumption than a similar system equipped with the most efficient air cooled condenser. The main energy consumption in a refrigeration system is the compressor, while the heat rejection energy consumption (i.e., the condenser) is relatively minor in comparison. So doesn't it make sense to protect and support the technology that enables the lowest system energy consumption? Furthermore, contrary to the CEC's consultant's response to the industries comments, air cooled and water cooled systems are compared every day by system designers and operators on an operating cost and first cost basis, as well as other criteria such as water availability. Both technologies have a place in the industry, but the playing field must be level between the two alternatives.



On this basis, BAC respectfully recommends that the CEC implement these new requirements on a similar basis as was done originally for cooling towers. At that time, the CEC first implemented an efficiency standard of 38.2 gpm per hp for cooling towers, which eliminated approximately 5% of the available models from the marketplace. This seems a much more reasonable approach for a first time standard and is more in line with what the commission is proposing for the air cooled condensers.

Therefore, BAC recommends that the proposed wording in Table 120.6-B be changed to reflect the following for evaporative condensers above and below 8,000 MBH:

Outdoor (axial fan) evaporative condensers > 8000 MBH: 225 Btuh/W

Outdoor (axial fan) evaporative condensers < 8000 MBH and indoor (centrifugal fan) evaporative condensers: 150 Btuh/W

Note: Efficiencies listed above at 100°F CT and 70°F WBT for all refrigerants

BAC estimates that the proposed levels above would eliminate approximately 7% of the least efficient evaporative condenser models from the marketplace, while following the previously set precedence. These new requirements will signal both the market and manufacturers of the need for greater levels of efficiency in the future and allow time for all stakeholders to adapt.

Without a revision to the proposed standard of 350 Btuh/W, I believe it is incumbent upon the CEC to explain why a break with precedence is appropriate in this case. Additionally, because of the magnitude of the impact on both the industry and the manufacturers of evaporative condensers, it would also be appropriate for the commission to formally explain in both economic and technological terms the dissemblance involved when evaluating similar technologies within the same industry and proposing minimum efficiency levels with drastically different effect.

In summary, BAC commends the work of the California Energy Commission to lead the industry forward towards a higher standard of energy efficiency. We offer our full support to this mission and look forward to working with the commission in the future. While progress forward never seems fast enough, we ask that the commission be prudent and responsible in its evaluation process for creating this new requirement and follow previous precedence in its implementation. I also suggest that the knowledge and experience of industry experts and manufacturers be given the appropriate weight in the process.



BALTIMORE AIRCOIL COMPANY

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Please feel free to contact me at the information below to discuss any questions and concerns. I would also be happy to arrange a visit for CEC Staff to our Madera production facility and / or our R&D facility in Maryland to see the products and laboratories first hand.

Sincerely,

A handwritten signature in black ink, appearing to read 'Preston Blay', is written over a light gray rectangular background.

Preston P. Blay, LEED AP, P.E.

Director, Refrigeration

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