

DOCKETED

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Additional submitted attachment is included below.



July 6, 2018

The Honorable J. Andrew McAllister, PhD
Commissioner
California Energy Commission
1516 Ninth Street, MS -34
Sacramento, CA 95814

The following comments are on behalf of Sullivan-Palatek, Inc.

Issue: Whether the State of California should adopt the test method for compressors as published in 10 C.F.R Section 431.344(Appendix A to Subpart T of C.F.R. 431).

My background: Bruce C. McFee, President, Saylor-Beall Manufacturing Company, Chairman CEO, Sullivan-Palatek, Inc. PH: 989-224-2371, ext. 229.

Our group herein referred to as Sullivan-Palatek is a family owned manufacturer and we have three product lines, reciprocating air compressors, electric motor driven air compressors, diesel engine driven air compressors. Our companies employ about 200 people, all located in the US. While we would be considered a small business, we have considerable knowledge, expertise and experience with our staff.

I have worked in the air compressor industry for 33 years. I have visited more than 1,000 customers, hundreds of suppliers and spent substantial time at each of our plant operations. I have two business degrees from the University of Michigan. Prior to joining the air compressor industry, I worked for six years at IBM Corp as a systems engineer. I also have participated with our industry association, Compressed Air & Gas Institute (CAGI) since 1990.

During the last few years, we have participated with the Department of Energy's investigations. Navigant (contracted by DOE) consultants toured both of our facilities where we filled out lengthy questionnaires and answered many questions. In the spring of 2015, we also participated in a manufacturer's survey with Navigant that ended with a four hour conference call to review our responses. More recently, I attended and spoke at the June 20, 2016 meeting in Washington DC. In addition, I have submitted comments to four separate rule making requests for DOE when it has related to compressors.

During the same period I have also worked closely with CAGI to better understand the issues and develop an accurate industry response to this NOPR. The work has included five full days of face to face meetings with other CAGI members, eight regularly scheduled industry

association meetings, and numerous conference calls that have continued once or twice per month. The whole group of core members on this CAGI committee have put in lots of hard work and have tried to come up with accurate positions that will meet the needs of DOE, the end customers, and our own companies. I have personally participated in formal CAGI responses to DOE and help drafted selected subsections.

Please note that this background has been provided to you so that you will understand I have the experience to make comments that are credible.

THE COMMENTS: While the goal of improved energy efficiency is a noble one, compressed air systems are often customized and very complex. Unlike household appliances that function in standalone operations, compressors are usually integrated into incredibly unique and diverse systems that must be balanced. Therefore, any effort to place an efficiency standard on the air compressor component must also consider how the standard will impact air compressor systems.

Many people consider compressed air as a fourth utility, behind only electricity, water, and natural gas utilities. The applications of compressed air are broad, affecting manufacturing, energy production, food packaging, water treatment, vehicle maintenance, construction and almost anything else that uses mechanical automation. Likewise, the diverse range of compressed air users may include manufacturing plants, hospitals, dairy farms, underground mines, dry cleaners, small repair shops, pharmaceutical laboratories, large office buildings and outdoor construction sites and many more. The diverse nature of these uses requires many specialized products that cannot be easily regulated in a one size fits all standard.

In the event we could no longer use compressed air and no substitute was implemented, the standard of living we know would likely cease to exist. Therefore, any good social policy will support the effective use of compressed air.

Compressed Air Challenge: Several decades ago, the US Department of Energy (DOE) and the Compressed Air & Gas Institute (CAGI) established a program focused on improving the energy efficiency in compressed air systems. CAGI is the US based trade association representing manufacturers of compressed air equipment. The program named the Compressed Air Challenge has a purpose of helping industry lower the cost of energy in a compressed air system.

In addition to helping users of compressed air identify wasteful air leaks, it focuses on optimization of system design as a way to save energy. A compressed air energy audit usually examines whether a system is using the correct air pressure, whether there is a better way to handle irregular periods of compressed air usage, whether the piping and air storage system is appropriate for the application, whether the system starts too often, whether the filtration system used to meet unique air quality needs is appropriate for the system and many other items that might reduce energy usage. As a result, a good energy audit can reduce energy consumption by 10-50%.

The Department of Energy Test Procedures: although currently part of the Federal Register, the Test Procedures rule is on hold for an indefinite period of time until other aspects of compressor rules can be resolved. It appears from the link used by the California Energy Commission that only a subset of the DOE Test Procedure rule is being considered, thus you may need to locate the link for the full rule.

Also note that a second component of DOE's rule making process covered standards. While DOE presented a final version of the compressor standards rule, it is not presently included in the Federal Register. Three points coming out of the standard rule included that 1) the rule would result in a 6/10 of one percent reduction in energy consumption by covered compressors, 2) The rule was expected to cost manufacturers \$121.3 million in costs of redesigning their products, and 3), the manufacturers were being allowed five years before the products needed to meet this standard.

During the rule making process with DOE, CAGI and company stakeholders were provided numerous opportunities to comment and become familiar with the DOE rule. As noted by CAGI, the industry already has a standard for measuring the performance of compressed air that is different than the one proposed by DOE.

The proposed DOE test procedure makes substantial changes to past methods testing that was used by industry. This includes a sampling system that may be acceptable for monitoring high volume appliance products, but did not make sense for air compressors that have so many variations of machines and machine features.

In addition, the rules did not accommodate the needs of small volume specialty equipment, nor did it accommodate the issue that compressor efficiency may be different at different pressures.

For instance, there may be numerous designs using custom motors for indoor use, outdoor use or explosion proof designs when compressors are used near flammable materials. Others are designed to handle humid or salty air conditions. Each system, whether NEMA 4 or NEMA 7 represents a different configuration and each motor type also creates a different model that must comply with the performance standard.

Some compressors need to operate in a cold environment. Because of freeze up issues, special consideration is given to the air flow direction on intake and exhaust. Also the aftercooler configuration might be unique, in some cases a stainless steel aftercooler is required, in other cases the size of the aftercooler is varied. The design requirements are different for a compressor planned for indoor use. If the environment is in a hot desert, the design requirements would be different again. In many cases where heat is a concern, a water cooled compressor is needed, demonstrating an additional distinction for custom applications.

Another variation that might occur with special inlet and downstream filtration that is needed for a custom application, but ends up changing the compressor package and possibly its efficiency.

Compressors often operate at different output pressures. Published pressures often consist of 100 psi, 115 psi, 125 psi, 150 psi, 175 psi and 200 psi. While compressor units can usually operate at multiple pressure ranges, a compressor pump model has a sweet spot for energy efficiency and is unlikely to perform identically at each pressure.

Considering the different horsepower ranges in CAGI categories, we have 5, 7.5, 10,15, 20,25, 30, 40, 50, 60,75,100,125, 150, 200, 250, 300, 350, 400 and 450 horsepower model, each size needing to accommodate the different variations of motors, temperature considerations, pressure differences and other custom type applications needed by the customers.

The number of possible models covered by the regulation can easily be in the thousands. Many of these models end up being built for the first time. Not only is there a cost of testing, but the manufacturer takes a risk that custom variations might not pass the energy test. In the event that no solution is found to accommodate custom configurations, consumers might find that manufacturers will no longer supply specialty models in California.

Current CAGI Performance Verification Program of rotary compressors: CAGI also oversees a voluntary performance verification program where manufacturers provide selected models for testing by a third party. The purpose of this testing was to bring confidence to the consumer public that performance data could be relied upon. The program also has brought increased attention to the energy efficiency ratings on compressors and forced manufacturers to make improvements to their compressor packages.

Conclusion: While most of the compressor manufacturing industry is based outside California, we believe that implementation of this rule will impact users of compressors in California and its residents. The DOE analysis expected energy savings of 6/10 of one percent nationwide with a cost to manufacturers of \$121.3 million. At least five of the manufacturers and packagers analyzed by DOE were classified as small business.

Since the rule has not yet been implemented at the federal level, many of the stake holders have still been working with DOE officials attempting to address some of its known problems.

The federal rule also was drafted with a five year time delay after admission to the Federal Register before any standard would take place to give manufacturers time to change their products and adjust testing procedures.

Before implementing this rule the California Energy Commission should analyze what portion of manufacturers will participate in a program unique to California, that changes decades of past practice in testing, and whether withdrawal of custom products might harm California consumers and end users. In addition the California Energy Commission should analyze the impact of changes to compressor offerings on the full compressed air system as outlined in the above focus on the Compressed Air Challenge.

Sincerely,

Bruce C. McFee
Chairman: Sullivan-Palatek, Inc.
President: Saylor-Beall Manufacturing Company

Sullivan-Palatek, Inc.
1201 W. US Hwy 20, Michigan City, Indiana 46360
Tel: 219-874-2497 Fax: 219-809-0205
Website: www.sullivanpalatek.com