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Compressed Air & Gas Institute Comments

Additional submitted attachment is included below.

December 31, 2018

Compressed Air & Gas Institute Comments to California Energy Commission

Subject: Commercial and Industrial Air Compressors, Docket No. 18-AAER-05,
Proposed Rules Amending Title 20, California Code of Regulations, §§ 1601-1609
Published November 16, 2018

The Compressed Air & Gas Institute (CAGI) provides the comments below regarding Docket No. 18-AAER-05, Proposed Rules Amending Title 20, California Code of Regulations, §§ 1601-1609, Commercial and Industrial Air Compressors.

CAGI Overview

Founded in 1915, the Compressed Air and Gas Institute has more than 100 years of service to the compressed air industry and to users of compressed air systems. CAGI is the united voice of the industry, serving as the unbiased authority on technical, educational, promotional, and other matters that affect the compressed air and gas industry. Our membership includes US-based as well as international companies that manufacture compressors and other compressed air system products.

We appreciate the California Energy Commission's interest in compressors and compressed air systems. CAGI has been working for decades to achieve the same goals related to compressors as the CEC, starting with development of standards that provide true package performance. We have devoted significant resources not only to development of standards but also to development of training and educational materials designed to educate purchasers and end users regarding proper selection and operation of compressed air systems, compressors, and other compressed air system equipment.

CAGI has a long history of collaborating with other organizations to benefit all stakeholders, including related international organizations, such as PNEUROP (the European Committee of Manufacturers of Compressors, Vacuum Technology, Pneumatic Tools, Air Treatment Equipment and Condensate Treatment Equipment), utilities, energy efficiency organizations such as CEE and ACEEE, the Compressed Air Challenge, and the Department of Energy. We look forward to continuing this collaboration.

Compressed Air & Gas Institute
Thomas Associates, Inc.
Secretary-Treasurer
1300 Sumner Avenue, Cleveland, OH 44115
P: 216-241-7333 F: 216-241-0105 E: cagi@cagi.org URL: www.cagi.org

We continue to believe that the best improvements in efficiency relative to compressed air systems lie outside of the actual equipment that is used to compress the air. The industry has been striving to increase the efficiency of its products for many years. This effort to improve efficiency has accelerated as CAGI and its members have published performance information in standard formats. In addition, the existence of CAGI's third party performance verification program has provided confidence in the data that is published by the participating manufacturers. These programs have increased competition within the industry to the benefit of all parties.

Overview of Regulation

The benefits of regulation of compressors in terms of reducing energy use and in reducing climate impact are overstated. As we noted in our comments to DOE and to the CEC working group, the calculations of energy currently consumed by compressors are not accurate:

- The number of compressors sold in California as estimated by the CEC appears to be far above the actual number sold based on data available to us.
- Estimates of the hours that compressors are operated are inaccurate and inflated.

There is benefit to regulation in forcing all manufacturers to abide by nationally recognized performance standards. The members of CAGI, particularly those who have participated in the CAGI Performance Verification Program, have provided verified, true package performance data for many years. This data helps purchasers and users of compressors in proper selection and operation of equipment. Requiring all manufacturers to provide this data will benefit California residents.

Specific Comments Regarding CEC Proposal

As we stated in our previous comments to the working group, we attempted to clarify the federal regulation upon which the CEC proposal is based to avoid misunderstanding as much as possible. Outlined in the 4 points below is our understanding of the intent of the regulation. We believe these items are ambiguous, and we seek affirmation of our understanding from the CEC (references are to the federal regulation which is incorporated in the proposed revision by reference in Section 1604.):

1. AEDM Tolerance: In 429.70(h)(2)(ii)(a) the 5% tolerance only applies for validation of the AEDM, when comparing the physical test results of the basic models upon which the AEDM is based and the output of the AEDM.

   Some have interpreted the rule to permit a 5% tolerance on all tests.

2. ISO Tolerances: The CEC test procedure is based on ISO 1217 and the tolerances in 1217 are applicable.

   In §431.343, Materials incorporated by reference, the regulation, in (b)(1)(vi) states the following: "Annex C (normative), Simplified acceptance test for electrically driven

packaged displacement compressors (excluding C.1.2, C.2.1, C.3, C.4.2.2, C.4.3.1, and C.4.5)." Annex C, C.1.1 includes Table C.1, Maximum deviations from specified values during an acceptance test, and Table C.2, Maximum deviations permissible at test.

We believe it is critical that the tolerances outlined in the ISO 1217 standard be included in the regulation, and we believe it is the intent of the CEC to include those tolerances.

The ability to use historical data based on previously conducted tests according to the ISO 1217 standard is essential in maintaining access to necessary compressed air equipment in California. The proposed test method and the ISO 1217 test method provide results that are substantially equivalent. Requiring duplicate testing of existing models will be excessively costly and will provide no meaningful benefit.

3. Specialty Equipment: If a customer requests modification to a basic model, and the manufacturer does not provide efficiency data to the general public for this modified model, testing of the modified model is not required. The basic model, upon which the modified unit is based, would be tested with the data being available to the general public.

   Clarification of how specialized equipment is treated in the regulation is important. It is often the case that a basic model is modified to meet application-specific requirements. Such special equipment does not appear in "catalogue" listings, and, while based on the normal configurations of the basic models, some of the modifications may affect performance.

4. Maximum Discharge Test Pressure. Appendix A.III.B.2.2 provides instructions regarding determination of the maximum discharge pressure. A manufacturer's instructions regarding the maximum discharge pressure are to be followed when testing according to this requirement regardless of the capability of the machine. For example, if a manufacturer instructs that a compressor maximum discharge pressure is 115 psig, that is the pressure that will be tested regardless of the actual maximum discharge pressure that the compressor may be capable of achieving.

Implementation Date

Given the complexity of testing and of the equipment itself, the confusion in the industry engendered by the state of federal regulation, and the volume of models that must be tested and/or redesigned, we believe an implementation date of 2024 is more realistic and will allow consumers in California to have access to the compressed air equipment they need. The proposed implementation date of 2022 likely will result in the absence of some compressors from the California market.

CAGI and its members will continue the work that we have been pursuing since the organization's founding. We stand ready to further enhance the efficiency and effectiveness of

compressed air systems and compressed air system equipment, hopefully by building on the solid foundation that already exists.

Sincerely,

R. Christopher Johnson
Compressed Air and Gas Institute

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