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Written Comments Received on Proposed Regulations for Commercial and Industrial Air Compressors
Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1609, California Code of Regulations
45- day comment period: November 16, 2018 – December 31, 2018

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Troy Ratterree, Compressed Air Systems	"1. DOE EERE-2013-BT-STD-0040 is based on known flawed data. The run time for compressors used to form and justify the EERE-2013-BT-STD-0040 regulation was based on refrigeration equipment run cycles rather than air compressor run data. This was noted during the public hearings June 2016 and noted in the public comments."	1. Comment acknowledged. No change is necessary. This comment is inaccurate. Refrigeration duty cycles were only used in the emissions analysis and not the technical and economic analyses that determined energy savings and cost savings.[1] The U.S. Department of Energy (DOE) Technical Support Document (TSD) for the pre-publication final rule for energy conservation standards for commercial and industrial air compressors (compressors) extensively details DOE's approach to developing load profiles and annual hours of operation for compressors.[2]
	"2. There are many flaws in EERE-2013-BT-STD-0040 noted in comment and the supporting documents. These flaws were not corrected. Most of the undue burdens of EERE-2013-BT-STD-0040 will cause damage to small air compressor manufactures and their distributors. These flaws will also cause the cost of air compressor to rise unreasonably."	2. Comment acknowledged. No change is necessary. This comment refers to the entire docket (EERE-2013-BT-STD-0040) for the DOE rulemaking for energy conservation standards for compressors. DOE proposed to establish standards at trial standards level (TSL) 2, stating that "TSL 2 balances the benefits of the energy savings at TSL 2 with the potential burdens placed on compressors manufacturers, including small business manufacturers."[3] DOE did not make any findings that small businesses will bear a disproportionate share of regulatory costs and

[1] Department of Energy, Transcript of Public Meeting on Compressors: Energy Conservation Standards, June 20, 2016, https://www.regulations.gov/document?D=EERE-2013-BT-STD-0040-0044, pp. 143-144.
[2] Department of Energy, Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Air Compressors, https://www.regulations.gov/document?D=EERE-2013-BT-STD-0040-0082, pp. 7-6 to 7-10.
[3] Department of Energy Pre-Publication Final Rule, Energy Conservation Program: Energy Conservation Standards for Air Compressors, https://efiling.energy.ca.gov/GetDocument.aspx?tn=225912-5&DocumentContentId=56596, p.335.

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		burdens. The Energy Commission's regulations establish performance standards with identical stringency as the DOE proposed standards at TSL 2. These standards are agnostic to the size of the manufacturer and require all manufacturers to meet the same requirements. During the Energy Commission proceeding, no reasonable alternatives to the proposed regulations were proposed that would lessen any adverse impact on small business or that would be less burdensome and equally effective in achieving the purposes of the regulation in a manner that achieves the purposes of the statute being implemented. The Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	"3."a. "Title II SBA(2) the DOE acknowledged that small business will bear a disproportionate share of regulatory costs and burdens a. DOE Page 44 TP DOE acknowledges on low quantity air compressors it will be a significant burden, testing will out weight the benefits b. DOE Page 169 TP participants, regardless of size, must be held to the same testing"	3a. Comment acknowledged. No change is necessary. The commenter does not accurately represent statements made by the DOE in the final rule for test procedures for compressors. The DOE stated that the scope of the test procedure, "includes many low shipment volume or custom compressor models, and the requirement to test such models **could** cause significant burden. Therefore in this final rule, DOE is taking two key steps to address commenters' concerns and reduce the burden of testing, especially for low volume equipment: (1) DOE is significantly limiting the scope of this final rule, as compared to the scope proposed in the test procedure NOPR, and (2) DOE is allowing the use of an AEDM, in lieu of

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		testing."[4] (emphasis added) In fact, the DOE did not make any findings that small businesses will bear a disproportionate share of regulatory costs and burdens. Additionally, see response to 2. above. Title 20, CCR, section 1604(s) incorporates by reference the DOE test procedure for air compressors found in title 10, CFR, Appendix A to subsection T of part 431. The Energy Commission is preempted from requiring a test procedure different from the federal test procedure. On July 3, 2017, it became mandatory that any manufacturer representations with respect to energy use or efficiency must be made in accordance with the results of testing pursuant to the federal test procedure.
	"3."b. "The DOE recognized that this regulation will place a undue financial burden on American small business. a. DOE Page 238 FR **DOE understands that small manufacturers may be significantly affected by an energy conservation standard** b. DOE Page 240 FR **DOE recognizes that small manufacturers may be substantially impacted by energy conservation standards**"	3b. Comment acknowledged. No change is necessary. The bold (by commenter) portion of this comment is a direct quote from the DOE pre-publication final rule for energy conservation standards for compressors and is a statement by DOE and not by the commenter. The commenter has simply restated DOE commentary that small manufacturers **may** be significantly affected and substantially impacted. (emphasis added). In fact, the DOE did not make any findings that small businesses will bear a disproportionate share of regulatory costs and burdens. Additionally, see response to 2. above.

[4] Department of Energy, Energy Conservation Program: Test Procedures for Compressors, Final Rule, https://www.regulations.gov/document?D=EERE-2014-BT-TP-0054-0023, p. 1095.

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	"4. There is no requirement by law to enact this regulation. a. DOE Page 178-179 TP notes that certification of compressor models is not currently required because energy conservation standards do not currently exist for compressors."	4. Comment acknowledged. No change is necessary. DOE issued a pre-publication final rule, a document relied upon for this proceeding, but never published the final rule. Therefore, there are no federal efficiency standards for commercial and industrial air compressors. California law under Public Resources Code section 25402(c)(1) states; *The commission shall, after one or more public hearings, do all of the following, in order to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy…* Prescribe, by regulation, standards for minimum levels of operating efficiency,…to promote the use of energy and water efficient appliances whose use, as determined by the commission, requires a significant amount of energy or water on a statewide basis. The Energy Commission adopted these energy efficiency standards as required by PRC 25402(c). The Energy Commission determined that the regulations will save energy, are based on feasible efficiencies, and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	"5. DOE recognizes that this regulation may be giving foreign owed air compressor manufactures a market advantage. Many foreign Govt's will bear the cost of test labs such as China, Japan, and Germany. This is not available to America owned small businesses. 1. DOE page 103 TP equitable to all industry participants, regardless of the location that equipment is manufactured."	5. Comment acknowledged. No change is necessary. The test procedure and performance standards are agnostic to the location or country of origin of a manufacturer and require all manufacturers to meet the same requirements.

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	"6. The DOE regulation testing math is not currently used by any American air compressor manufacture."	6. Comment acknowledged. No change is necessary. Current use of testing by American manufacturers is not a requirement for either DOE or the Energy Commission when adopting a test procedure or an energy efficiency standard. Regulatory calculations were developed through a public process with input from stakeholders, including air compressor manufacturers.
	"7. **Section 1**. Statement of Regulatory Philosophy and Principles Dept of Energy. (a) The Regulatory Philosophy. Federal agencies should promulgate only such regulations as are required by law, are necessary to interpret the law, or are made necessary **by compelling public need**, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people. **This measure is not met**."	7. Comment acknowledged. No change is necessary. These regulations were proposed and adopted by the Energy Commission, not DOE. The Energy Commission determined that the regulations will save energy, are based on feasible efficiencies, and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	"8. Agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating: **Was not regulating considered?**"	8. Comment acknowledged. No change is necessary. These regulations were proposed and adopted by the Energy Commission, not DOE. The Energy Commission considered alternatives to the proposed regulation, including the alternative of maintain the status quo of no regulation, as discussed in the Notice of Proposed Action. The Energy Commission also considered all alternatives presented to it during the public comment period and found that no alternative would be more effective in carrying out the purpose for this action, would be as effective and less burdensome to affected persons that the proposed regulations, or would be more cost-

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		effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.
	"9. (1) Each agency shall identify the problem that it intends to address (including, where applicable, **the failures of private markets** or public institutions that warrant new agency action) as well as assess the significance of that problem. The public market IE (compressor manufactures) have a history of implementing energy efficient measures, IE VSD and High E motors, constant product improvements in form and design to reach higher efficiency. This is a key area air compressor manufactures compete in."	9. Comment acknowledged. No change is necessary. These regulations were proposed and adopted by the Energy Commission, not DOE. See the Energy Commission's Problem Statement in the Initial Statement of Reasons.
	"10. (3) Each agency **shall identify and assess available alternatives** to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public. **Were alternatives identified or assessed in the regulation?**"	10. Comment acknowledged. No change is necessary. These regulations were proposed and adopted by the Energy Commission, not DOE. The Energy Commission considered alternatives to the proposed regulation, as discussed in the Notice of Proposed Action. The Energy Commission also considered all alternatives presented to it during the public comment period and found that no alternative would be more effective in carrying out the purpose for this action, would be as effective and less burdensome to affected persons that the proposed regulations, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.
	"11. Each agency shall tailor its regulations to impose the least burden on society, including individuals, businesses of differing sizes, and other entities	11. Comment acknowledged. No change is necessary. "DOE concludes that the test procedures and associated representations

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	(including small communities and governmental entities), consistent with obtaining the regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations. **The purposed testing method is not the least burdensome alterative.**"	requirements established in this test procedure final rule are not unduly burdensome, as (1) the test method follows accepted industry practice, and (2) only a limited number of models (if any) may, at the manufacturer's discretion, need to be retested in order to continue to make representations."[5] Title 20, CCR, section 1604(s) incorporates by reference the DOE test procedure for air compressors found in title 10, CFR, Appendix A to subsection T of part 431. The Energy Commission is preempted from requiring a test procedure different from the federal test procedure. On July 3, 2017, it became mandatory that any manufacturer representations with respect to energy use or efficiency be made in accordance with the results of testing pursuant to the federal test procedure. Additionally, see response to 13. below.
	12. "Each agency shall draft its regulations to be **simple and easy to understand**, with the goal of minimizing the potential for uncertainty and litigation arising from such uncertainty. **This is a complicated erroneous regulation see the formula on page 2 for one example.**"	12. Comment acknowledged. No change is necessary. These regulations were proposed and adopted by the Energy Commission, not DOE. It is correct that the performance regulations for commercial and industrial air compressors are stated as mathematical equations but these equations are understood by the regulated community and were developed with stakeholder input. The Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the

[5] Department of Energy, Energy Conservation Program: Test Procedures for Compressors, Final Rule, https://www.regulations.gov/document?D=EERE-2014-BT-TP-0054-0023, p. 1095.

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		appliances, as required by PRC 25402(c)(1). The proposed regulation meets the clarity requirements under California Government Code 11349.1(a) because it uses plain language, and when technical terms are required for certification, it references a test procedure that clearly explains the test methodology and calculation to certify a compressor.
	13. "Have an annual effect on the economy of **$100 million** or more or adversely affect in a material way the economy, a sector of the economy, **productivity, competition**, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; **The cost to the air compressor industry to meet the testing requirement will exceed the $100 mil thresh hold. My small company builds aprox 450 models at this time. Based on the industry estimated cost of $26,000 per model to test to this regulation, my small business alone will face a $11,700,000.00 cost if we never introduce a new model.**"	13. Comment acknowledged. No change is necessary. Testing is required for models manufactured on or after January 1, 2022. To reduce the amount of required testing, the regulations permit (1) testing of a basic model and extension of this data to additional models that have identical performance characteristics and (2) the use of alternative efficiency determination methods (AEDMs). AEDMs allow mathematical modeling of the performance of additional models, with differing performance characteristics, based on the tested performance data of a similar model. The manufacturer is responsible for determining if a given model can be certified using the basic model approach, an AEDM, or must be separately tested and certified. Regardless of approach, every unit sold or offered for sale in the state must comply with the energy efficiency standards. The Energy Commission determined that the regulations, including the cost of testing, are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by Public Resources Code (PRC) 25402 (c)(1). Testing must occur at Energy Commission-

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		approved test laboratories. The test laboratory approval process is specified in section 1603 of Title 20 and includes an online application through the Modernized Appliance Efficiency Database System (MAEDbS). Because the regulations had not been adopted yet, compressor test lab certification had not yet been incorporated into MAEDbS. Test laboratories may begin to obtain approval through MAEDbS a few months before the standards compliance date. Tests conducted pursuant to 1604(s) of Title 20 before the test lab is approved by the Commission may be used to certify data after the test lab obtains Commission-approval. Retesting is not necessary in that case. However, as the Energy Commission repeated throughout the proceeding, reliance on historical test data is acceptable, as long as the requirements of the California Code of Regulations (CCR), Title 20, section 1604 and 1606 are met and attested to in the required declaration. Staff stated, at the January 9, 2019, business meeting, "Any test results that are done according to the test procedure, whether they occur before the test lab is approved or after the test lab is approved, is fine for certification to our database. And our regulations are pretty clear on this and this is across all appliances, not specific to compressors."[6] California's regulations are silent on the sampling requirements for testing as a general rule for appliances, but does contain sampling requirements where relevant for specific appliances. The Energy Commission has

[6] Transcript of Energy Commission January 9, 2019, Business Meeting, p. 29.

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		consistently interpreted its regulations as requiring no more than a single unit to be tested for certification purposes. However, that enforcement testing may require two units to be tested if the first unit fails to meet the efficiency standards or the efficiency levels reported in the Energy Commission's database, with a determination based on the mean value of the two tests.[7] This is different from the DOE's general requirements, which specify the need for testing two units unless otherwise specified for a specific appliance.[8] For compressors, DOE specifies that manufacturers must randomly select and test "a sample of sufficient size" to ensure that a unit meets the reported efficiency values.[9] However, the Energy Commission did not adopt the DOE's sampling requirements into the regulations with respect to direct testing of compressor models, and therefore the DOE requirement for testing two units does not apply to direct testing. When using an alternative efficiency determination method (AEDM), it is correct that testing of two units is required, as the DOE sampling requirement for AEDMs is incorporated into the Energy Commission's adopted text.[10] During the Energy Commission proceeding, no reasonable alternatives to the proposed regulations were proposed that would lessen any adverse impact on small business or that would be

[7] See, e.g., Transcript of Energy Commission January 9, 2019, Business Meeting, p. 31 ("for our regulations we only require testing of a single unit in order to certify that test data to the database, for that model").
[8] 10 C.F.R. § 429.11(b).
[9] 10 C.F.R. § 492.63(a).
[10] CCR, title 20, section 1604(s)(3) of the adopted regulations require additional testing in Code of Federal Register, title 10, section 429.63 and 429.70 when applying an AEDM.

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		less burdensome and equally effective in achieving the purposes of the regulation in a manner that achieves the purposes of the statute being implemented. In addition, no information was provided to the Energy Commission supporting a testing cost of $26,000 per model. Information provided by stakeholders showed a testing cost of $3000 to $4000 per model.
	14. "Final rule Page 34 DOE suggest that there method has no potential benefits for reciprocating compressors yet by a miracle it is a benefit for screws? How can it benefit one compressor but not another? 2016). As discussed previously, and in agreement with Sullair's comments, DOE concludes that in the absence of existing or proposed energy conservation standards for reciprocating equipment, establishing a test procedure to measure performance of such equipment is not warranted at this time. Further, DOE concludes that the burdens associated with such a test procedure, as discussed by Sullair, outweigh any potential benefits at this time. Consequently, in this final rule, DOE is adopting test methods applicable only to certain rotary compressors and is not adopting any testing requirements for reciprocating compressors at this time. In response to the concurrent energy conservation DOE acknowledges these suggestions and concludes that separately reassessing certain segments of the reciprocating marketing may lead DOE to a better informed assessment of the burdens and benefits of test procedures and energy conservation"	14. Comment acknowledged. No change is necessary. The underlined (by commenter) portion of this comment is a direct quote from the DOE final rule for test procedures for compressors and is a statement by DOE and not by the commenter. The commenter has simply restated DOE's finding related to scope. The Energy Commission notes that DOE removed reciprocating compressors from the scope of its test procedure (see 82 Fed. Reg. at 1091). After considering all the information available at the time the rulemaking began, the Energy Commission chose not to include reciprocating compressors in the scope of the regulation. For rotary compressors, which were included in the scope of the regulation, the Energy Commission determined that the regulations, including the cost of testing, are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1). The Energy Commission's technical staff engaged manufacturers and other expert stakeholders which resulted in the recommendation to adopt the efficiency standards proposed by DOE.

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		The Energy Commission may establish test procedures and efficiency standards for reciprocating compressors at a future time, as these are not federally covered products and may be an opportunity for additional energy savings.
	15. "DOE Final Rule Page 44 DOE finds that infrequently built compressors will face a significant burden. Small companies only build small qtys thus all our models now face this significant burden. Based on the comments received and the discussion in this section, DOE concludes that the burden of testing requirements on compressors certain smaller and larger compressors outweigh the benefits."	15. Comment acknowledged. No change is necessary. The underlined (by commenter) portion of this comment is a direct quote from the DOE final rule for test procedures for compressors and is a statement by DOE and not by the commenter. The commenter has simply restated DOE's finding related to compressors less than 10 horsepower (smaller) and greater than 200 horsepower (larger). DOE removed these compressors from the scope of the compressors test procedure and proposed energy conservation standards. These compressors are not included in the scope of the Energy Commission's requirements. Additionally, see responses to 2., 3a., 3b., and 13. above.
	16. "DOE Final Rule Page 72 DOE conclusion is that the consumption of electricity (energy) is not the best method to Determine energy savings? Truth is it is the only way to determine efficiency, but since they already regulated electric motor efficiency there would be no cause for this additional regulation. For this reason, DOE concludes that the efficiency of the motor alone, even when coupled with the output airflow of the compressor, is not an appropriate metric to represent to energy efficiency or consumption of an air compressor."	16. Comment acknowledged. No change is necessary. The appliance energy efficiency regulations adopted by the Energy Commission are for commercial and industrial air compressors, which do not have federal efficiency standards. The standards achieve additional energy savings beyond the savings already achieved from federal electric motors by setting levels that could be met through more efficient technologies, including but not limited to efficient motors, and would be cost-effective to consumers. The adopted regulations do not apply to standalone electric motors, many of

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		which do have federal efficiency standards and for which the Energy Commission is preempted from setting efficiency standards.
	17. "DOE Final Rule Page 94 DOE recognizes they do not know if their regulation is technologically feasible In other words, test methods are still a work in progress for this variety of fixed-speed compressors. Additionally, with no historical part-load performance data available for variable-flow fixed-speed compressors, DOE would be unable to establish baseline and maximum technologically feasible efficiency levels, and would be unable to complete any of the analyses required to assess and establish energy conservation standards."	17. Comment acknowledged. No change is necessary. The underlined (by commenter) portion of this comment is a direct quote from the DOE final rule for test procedures for compressors and is a statement by DOE and not by the commenter. The commenter has simply restated DOE's finding related to the appropriate energy metric for this type of compressor. "DOE concludes that it is not appropriate to establish part-load package isentropic efficiency as the rating metric for non-speed-varying varieties of variable airflow compressors at this time."[11] Instead the DOE established a "test procedure that when rating a compressor for compliance purposes, full-load package isentropic efficiency applies to fixed-speed compressors, and part-load package isentropic efficiency applies to variable-speed compressors."[12] In its pre-publication final rule, a document relied upon for this proceeding, the U.S. Department of Energy (DOE) concluded, "that the standards in this final rule represent the maximum improvement in energy efficiency that is technologically feasible and economically justified, and will result in significant conservation of energy."[13]

[11] Department of Energy, Energy Conservation Program: Test Procedures for Compressors, Final Rule, https://www.regulations.gov/document?D=EERE-2014-BT-TP-0054-0023, p1073.
[12] Ibid.
[13] Department of Energy Pre-Publication Final Rule, Energy Conservation Program: Energy Conservation Standards for Air Compressors, https://efiling.energy.ca.gov/GetDocument.aspx?tn=225912-5&DocumentContentId=56596, p.17.

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		The Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by Public Resources Code (PRC) 25402(c)(1).
	18. "**DOE page 108 small American air compressors companies do not test to ISO 1217. In fact they did not ask. I believe DOE cannot site one small American small business that test to ISO1217** DOE acknowledges the comment made by Jenny Products; however, DOE reiterates that the goal of the proposed test procedure was to align with ISO 1217:2009(E), as amended,23 to reduce the burden and cost to manufacturers. Most manufacturers currently use ISO 1217:2009(E), and many of the testing- and calculation-related comments that DOE received suggested that DOE align its test procedure as closely as possible with ISO 1217:2009(E)."	18. Comment acknowledged. No change is necessary. Title 20, CCR, section 1604(s) incorporates by reference the DOE test procedure for air compressors found in title 10, CFR, Appendix A to subsection T of part 431. The Energy Commission is preempted from requiring a test procedure different from the federal test procedure. On July 3, 2017, it became mandatory that any manufacturer representations with respect to energy use or efficiency be made in accordance with the results of testing pursuant to the federal test procedure.
	19. "The DOE pg 166 claims they have acquired the knowledge of air compressors and how to apply the manufacturing to produce better efficiency. Yet they refer to one of their major varieties as reciprocating variable speed. (This is a class of compressor that does not exist) This further verifies my opinion that the DOE is regulating products without truly understanding the product they wish to regulate. If California is following the DOE regulation has there been any effort to study this industry and the types and uses for compressor air in California, or is the proposal to adopt a flawed DOE regulation. Would it be wise to gain understanding of the product that is purposed to	19. Comment acknowledged. No change is necessary. After considering all the information available at the time the rulemaking began, the Energy Commission chose not to include reciprocating compressors in the scope of the regulation. For rotary compressors, which were included in the scope of the regulation, the Energy Commission determined that the regulations, including the cost of testing, are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1). The Energy Commission's technical staff engaged

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	be regulated? Specifically, the test procedure NOPR contained four AEDM validation classes, applicable to four varieties of compressor: (1) rotary, fixed-speed; (2) rotary, variable-speed; (3) reciprocating, fixed-speed; and (4) reciprocating, variable-speed. DOE also proposed that two basic models be tested to validate the AEDM for each validation class for which it is intended to be applied." 20. "Doe page 168 the DOE suggest that developing a AEDM will not add a additional burden. They have omitted the cost to develop a AEDM required to meet this regulation is minimum Cost of $26,000 per model. This estimate does not include redesign and engineering that may Far exceed the cost of testing. With respect to Compressed Air Systems and CASTAIR's comments, DOE also notes that AEDMs were proposed as an optional strategy to evaluate equipment at a lower cost than physical testing. Under the test procedure NOPR proposal, manufacturers may continue to conduct physical testing according to the proposed test procedure and sampling plan instead of choosing to rate equipment using an AEDM, or both. Thus, given the optional nature of the AEDM, DOE does not expect the inclusion of AEDMs to result in additional burden to manufacturers. In fact, in many cases, use of an AEDM dramatically reduces the cost of rating compressor models, as once the AEDM is developed and validated, it can be used on any basic model for which it is validated"	manufacturers and other expert stakeholders which resulted in the recommendation to adopt the efficiency standards proposed by DOE. The Energy Commission notes that DOE removed reciprocating compressors from the scope of its test procedure (see 82 Fed. Reg. at 1091). The Energy Commission may establish test procedures and efficiency standards for reciprocating compressors at a future time, as these are not federally covered products and may be an opportunity for additional energy savings. 20. Comment acknowledged. No change is necessary. An AEDM does not add additional test burden because it is an alternative to the testing otherwise required that can avoid these test costs. However, the cost to test an initial basic model for developing an AEDM is, of course, still present and considered as part of the DOE rulemaking. In addition, no information was provided to the Energy Commission supporting a testing cost of $26,000 per model. Information provided by stakeholders showed a testing cost of $3,000 to $4,000 per model. Additionally, see response to 13. above.

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	21. "Doe page 169 the DOE suggest they recognize this regulation places a higher financial burden on Small businesses but they must bear it. Additionally, in response to Compressed Air Systems and CASTAIR's specific comments on the burden of test procedures or an AEDM, any test procedures or energy conservation standards DOE promulgates must be equitable to all industry participants, meaning that all participants, regardless of size, must be held to the same testing and energy conservation standard criteria. As discussed"	21. Comment acknowledged. No change is necessary. The underlined (by commenter) portion of this comment is a direct quote from the DOE pre-publication final rule for energy conservation standards for compressors and is a statement by DOE and not by the commenter. The commenter has simply restated DOE's commentary. DOE further states that it, "analyzed the costs of conducting testing and rating of compressors in accordance with the test procedures adopted in this final rule and accounted for the costs of such testing on manufacturers, including small manufacturers, in its energy conservation standards NOPR analysis."[14] DOE did not make any findings that small businesses will bear a disproportionate share of regulatory costs and burdens. Additionally, see response to 2. above.
	22. "DOE page 178-179 How did the DOE make this certification. They claim that since there is currently no regulation required, small businesses will not suffer the undue burden of expense due to this new regulation. DOE acknowledged this regulation is a unbearable burden producing no potential benefit on page 34. The testimony in response from all small businesses is that this regulation will cause large financial burdens that will damage their small business or cause them to close. DOE certifies that the adopted rule does not have a significant impact on a substantial number of small entities. DOE notes that certification of compressor models is	22. Comment acknowledged. No change is necessary. Same response as 21.

[14] Department of Energy, Energy Conservation Program: Test Procedures for Compressors, Final Rule, https://www.regulations.gov/document?D=EERE-2014-BT-TP-0054-0023, p. 1091.

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	not currently required because energy conservation standards do not currently exist for compressors. That is, any burden associated with testing compressors in accordance with the requirements for this test procedure will not be required until the promulgation of any energy conservation standards for compressors. On this basis, DOE maintains that the test 179 procedure final rule has no incremental burden associated with it and a FRFA is not required."	
	23. "DOE pg 204 states the basis for testing requirements are ISO 1217 This is a European standard that the foreign owned compressor manufacture hope the pass on USA manufactures in order to help them be more competitive in the American compressor market. 6 of the largest 7 air compressor manufactures in the world are foreign corporations. Members of the compressors industry developed ISO 1217:2009(E), which contains methods for determining inlet and discharge pressures, actual volume flow rate, packaged compressor power input, and package isentropic efficiency for electrically driven packaged displacement compressors."	23. Comment acknowledged. No change is necessary. The test procedure and performance standards are agnostic to the location or country of origin of a manufacturer and require all manufacturers to meet the same requirements. The Energy Commission determined that the regulations, including the cost of testing, are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	24. "DOE Page 124 DOE states that they lack sufficient data that this regulation will have the desired effect. No proof that this regulation will result in any electrical savings Compressed Air Systems commented that DOE did not provide proof that (1) the proposed standards would improve efficiency over current designs, (2) the proposed standards were technically feasible, and (3) the proposed standards provide an economic benefit for consumers. Finally, Compressed Air Systems	24. Comment acknowledged. No change is necessary. The underlined (by commenter) portion of this comment is a direct quote from the DOE pre-publication final rule for energy conservation standards for compressors and is a statement by DOE and not by the commenter. The commenter has simply restated the DOE's summarization of the commenter's comment into the DOE proceeding. As noted in the quoted portion of the DOE final, DOE reduced the scope of the

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	alleged that DOE did not collect sufficient data to support DOE's conclusions for the standards proposed in the NOPR. (Compressed Air Systems, No. 0061 at p. 1) As discussed in section III.B.6, **DOE acknowledges that it lacks sufficient data** for certain varieties of compressors and is reducing the scope of this final rule appropriately. For the compressors that remain in scope, DOE maintains that sufficient data exists to support adoption of a standard under the provisions of EPCA, as amended. Specifically, DOE discusses efficiency improvement in section IV.C.4, technological feasibility in section III.F, and the economic benefits to consumers in section V.B.1."	standards related to compressor types for which DOE did not have sufficient data. Further, as noted in the quoted portion of the DOE final, DOE states that sufficient data exists for the compressor types which remained in scope. In its pre-publication final rule, a document relied upon for this proceeding, the U.S. Department of Energy (DOE) concluded, "that the standards in this final rule represent the maximum improvement in energy efficiency that is technologically feasible and economically justified, and will result in significant conservation of energy."[15] After considering all the information relied upon, the information submitted to the record, and all the comments received, the Energy Commission chose not to include reciprocating compressors in the scope of the regulation. For rotary compressors, which were included in the scope of the regulation, the Energy Commission determined based on substantial evidence in the record that the regulations, including the cost of testing, will save energy, are based on feasible efficiencies, and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1). Additionally, see response to 2. above.
	25. "DOE Page 203 DOE input methods do not take into account that back up compressors are Normally used in application with 25 hp and above. Omitting this from the DOE electrical savings Is a large oversite that	25. Comment acknowledged. No change is necessary. DOE properly accounted for the various applications of compressors and used a probability of 22 percent that a compressor was

[15] Department of Energy Pre-Publication Final Rule, Energy Conservation Program: Energy Conservation Standards for Air Compressors, https://efiling.energy.ca.gov/GetDocument.aspx?tn=225912-5&DocumentContentId=56596, p.17.

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	will again lower there estimated carbon emissions savings by over 30%"	being used in an intermittent application, including back-up compressors.[16] Although the regulations will reduce carbon emissions by avoiding electricity consumption, the Energy Commission did not rely on the quantity or value of estimated emissions savings in determining the cost-effectiveness of the regulations. The Energy Commission determined that the regulations, including the cost of testing, are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	26. "DOE Page 208 more frequent service. In order to make a more efficient compressor And maintain the efficiency many parts will require service in shorter intervals. IE separators. DOE failed to request rational for their comment. Compressed Air Systems stated that maintenance costs would be higher for more efficient equipment due to the need for more frequent service. (Compressed Air Systems, No. 0061 at p. 3) Compressed Air Systems did not provide any rationale for this increase in service. In the absence of information to indicate what would drive the need for additional service, or at which efficiency level DOE may need to consider an increase in repair or maintenance costs, or other drivers that would trigger higher repair or maintenance costs for more efficient equipment, DOE has maintained the same approach as the NOPR and not estimated repair or maintenance costs for this analysis."	26. Comment acknowledged. No change is necessary. The underlined (by commenter) portion of this comment is a direct quote from the DOE pre-publication final rule for energy conservation standards for compressors and is a statement by DOE and not by the commenter. As noted by DOE, Compressed Air Systems did not submit any rationale or information into the DOE rulemaking to substantiate Compressed Air Systems' claims related to higher maintenance costs. Similarly, no information or data was introduced into the record of the Energy Commission proceeding specific to higher maintenance costs. The Energy Commission determined that the regulations, including the cost of testing, are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).

[16] Ibid., p. 191.

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	27. "Page 237 ODE estimates a cost of 121.3 million with min cost to small American manufactures $15.1 mil Although DOE is not exempting packagers from the analysis, DOE has revised its analysis to calculate and include costs associated with packagers in its final rule analysis. DOE estimates that packagers will incur between $10.5 and $15.2 million in total engineering redesign costs to comply with the energy conservation standards of this final rule. As such, DOE has included this cost to packagers in total conversion costs estimated at TSL 2, which are between $98.1 million and $121.3 million for the industry. Details of the conversion cost methodology are described in chapter 12 of the final rule TSD."	27. Comment acknowledged. No change is necessary. The underlined (by commenter) portion of this comment is a direct quote from the DOE pre-publication final rule for energy conservation standards for compressors and is a statement by DOE and not by the commenter. The commenter has simply restated the DOE estimates of engineering redesign costs and conversion costs for packagers. It is unclear what comment is being made with relation to the Energy Commission's rulemaking. DOE proposed to establish standards at trial standards level (TSL) 2, stating that "TSL 2 balances the benefits of the energy savings at TSL 2 with the potential burdens placed on compressors manufacturers, including small business manufacturers."[17] The Energy Commission's regulations establish performance standards with identical stringency as the DOE proposed standards at TSL 2. These standards are agnostic to the size of the manufacturer and require all manufacturers to meet the same requirements. During the Energy Commission proceeding, no reasonable alternatives to the proposed regulations were proposed that would lessen any adverse impact on small business or that would be less burdensome and equally effective in achieving the purposes of the regulation in a manner that achieves the purposes of the statute being implemented. The

[17] Department of Energy Pre-Publication Final Rule, Energy Conservation Program: Energy Conservation Standards for Air Compressors, https://efiling.energy.ca.gov/GetDocument.aspx?tn=225912-5&DocumentContentId=56596, p.335.

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		Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	28. "DOE page 238 DOE recognizes this regulation will likely cause small American air compressor manufacture to fail. DOE understands that small manufacturers may be significantly affected by an energy conservation standard"	28. Comment acknowledged. No change is necessary. Same response as 27.
	29. "DOE page 240 DOE recognizes this regulation will likely cause small American air compressor Manufacture to fail. DOE recognizes that small manufacturers may be substantially impacted by energy conservation standards"	29. Comment acknowledged. No change is necessary. Same response as 27.
	30. "DOE page 253 DOE recognizes the purpose of this regulation to save the carbon emissions Can not be calculated and they would have to rely on elements of uncertainty. This verbiage should be a red flag as they recognize they don't have a good understanding of the Impact this regulation may have. It is certain that small American companies will fail due to this purposed regulation. In contrast, the Joint Advocates stated that only a partial accounting of the costs of climate change (those most easily monetized) can be provided, which inevitably involves incorporating elements of uncertainty"	30. Comment acknowledged. No change is necessary. Although the regulations will reduce carbon emissions by avoiding electricity consumption, the Energy Commission did not rely on the quantity or value of estimated emissions savings in determining the cost-effectiveness of the regulations. The Energy Commission determined that the regulations, including the cost of testing, are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).

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	31. "The DOE regulation now being considered for adoption by California Energy Commision is a large undue finical burden to small American air compressor manufactures. Complying with the purposed regulation will damage or cause small American companies to fail. The DOE did not interview small business or consider the negative effects caused by this regulation. The damage is not only on the small manufactures but also the distributors of the small manufactures. My customers in California will also face an equal burden as they will no longer have a product to sell and service. This regulation will affect many distributors in California with an undue burden and unfair market place as they try to compete with large multinational manufactures that use these types of regulations to remove small businesses from the market place. The DOE failed to seek sound advice from small American air compressor manufactures or the SBA. They never sought any input from the air compressor distributors and how the lack of access to products produced by small business will affect their business."	31. Comment acknowledged. No change is necessary. Same response as 27.
	32. "The DOE acknowledged that they could not determine the benefit of this regulation on the environment or for the business community. They recognized the air compressor industry competes on energy efficiency. They recognized that their own regulation was flawed and the benefit could not be defined. I pray that the California Energy Commission will also see that this is one industry that should be allowed to have a competitive market place free of over burdensome regulation. This will allow Californians a more competitive air compressor so the things grown and made in California will have a more competitive edge in the worlds market place. I look	32. Comment acknowledged. No change is necessary. In its pre-publication final rule, a document relied upon for this proceeding, the U.S. Department of Energy (DOE) concluded "that the standards in this final rule represent the maximum improvement in energy efficiency that is technologically feasible and economically justified, and will result in significant conservation of energy." The Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by Public Resources Code

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	forward to hearing how we can work together in curtailing unneeded regulation."	(PRC) 25402(c)(1). Impacts on businesses and California competitiveness were analyzed and presented in the Initial Statement of Reasons.
Patrick Kelly, President/Owner of CASTAIR, inc.	1. CASTAIR, established in 1991, we currently have 7 employees and average $3.2 million in sales. 2. This type of proposed regulation creates obstacles that any future start-up companies, like mine, would not be able to overcome, considering all of the other challenges faced by small business today. This purposed regulation will force us out of this business sector in your state and result in the reduction of our staff. My greatest fear is that this will lead to more proposed regulations for the reciprocating air compressor industry, which is our primary business. The machines in question would easily pass a efficiency test but cost of compliance are too great for a small air compressor assembler like us.	1. Comment acknowledged. No change is necessary. 2. DOE proposed to establish standards at trial standards level (TSL) 2, stating that "TSL 2 balances the benefits of the energy savings at TSL 2 with the potential burdens placed on compressors manufacturers, including small business manufacturers."[18] DOE did not make any findings that small businesses will bear a disproportionate share of regulatory costs and burdens. The Energy Commission's regulations establish performance standards with identical stringency as the DOE proposed standards at TSL 2. These standards are agnostic to the size of the manufacturer and require all manufacturers to meet the same requirements. During the Energy Commission proceeding, no reasonable alternatives to the proposed regulations were proposed that would lessen any adverse impact on small business or that would be less burdensome and equally effective in achieving the purposes of the regulation in a manner that achieves the purposes of the statute being implemented. The Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the

[18] Department of Energy Pre-Publication Final Rule, Energy Conservation Program: Energy Conservation Standards for Air Compressors, https://efiling.energy.ca.gov/GetDocument.aspx?tn=225912-5&DocumentContentId=56596, p.335.

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		appliances, as required by PRC 25402(c)(1). In order to address the increase in cost to test, DOE amended the compressor test procedure to align as close as possible to ISO 1217:2009 in order to reduce manufacturer burden. With those modifications, the test methods established in the final rule are intended to produce results equivalent to those produced historically under ISO 1217:2009. Consequently, if historical test data is consistent with values that will be generated when testing with the test methods established by DOE, the manufacturers may use this data for the purposes of representing any metrics subject to representations requirements. After considering all the information available at the time it began its rulemaking, the Energy Commission chose not to include reciprocating compressors in the scope of the regulation. The Energy Commission may establish test procedures and efficiency standards for reciprocating compressors at a future time, as these are not federally covered products and may be an opportunity for additional energy savings.
	3. Air compressors consume electricity by using an electric motor. The DOE already regulates this industry. It's simple; Air compressors consume kW and produce CFM. This is a very easy thing to test and record without requiring expensive test equipment and facilities. Logically this is what should then be regulated, if it must, is the efficiency between the two kW=CFM for air ends and pumps.	3. Comment acknowledged. No change is necessary. The DOE regulations for motors do not capture energy efficiency improvements that can be made in compressors, which are not federally regulated. "DOE acknowledges that this general metric could properly characterize the typical energy use of an air compressor, if coupled with an appropriate test method. However, this ratio has a significant

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		shortcoming as a regulatory metric. Specifically, achievable kW/cfm is a function of both pressure and flow, which means an energy conservation standard would need to be a function of both pressure and flow—a more complex determination as compared to package isentropic efficiency. Thus, in this final rule, DOE concludes that a metric of the form kW/cfm introduces unnecessary complexity into any energy conservation standards that would rely on such a metric (i.e., adding pressure as a second dependent characteristic)."[19] The Energy Commission is preempted from requiring a test procedure different from the federal test procedure or from requiring a different energy metric than is used in the federal test procedure.
R. Christopher Johnson Compressed Air and Gas Institute (CAGI)	1. Copy of letter, dated August 9, 2017, sent to Mr. John Cymbalsky of the U.S. Department of Energy showing comments made by CAGI to DOE.	1. Comment acknowledged. No response required.
R. Christopher Johnson Compressed Air and Gas Institute (CAGI)	1. 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.): 2. 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	1. Comment acknowledged. No response required. 2. Comment acknowledged. No change is necessary. Commenter's reference to section 429.70 of 10 CFR is applicable to AEDM requirements and not to the test procedure requirements listed in Appendix A, of subpart T of

[19] Department of Energy, Energy Conservation Program: Test Procedures for Compressors, Final Rule, https://www.regulations.gov/document?D=EERE-2014-BT-TP-0054-0023, p. 1068.

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	a 5% tolerance on all tests.	section 431 of 10 CFR. The tolerance referenced by the commenter is not applicable to the test procedure but it is applicable to the validation of the AEDM procedure.
	3. 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. Comment acknowledged. No change is necessary. Title 20, CCR, section 1604(s) incorporates by reference the DOE test procedure for air compressors found in title 10, CFR, Appendix A to subsection T of part 431. The Energy Commission is preempted from requiring a test procedure different from the federal test procedure. On July 3, 2017, it became mandatory that any manufacturer representations with respect to energy use or efficiency be made in accordance with the results of testing pursuant to the federal test procedure. The only acceptable tolerances from ISO-1217:2009 are those tolerances clearly referenced by the DOE test procedure. Note that DOE modified the tolerances in the test procedure, "in order to align as closely as possible to ISO 1217:2009(E), as amended. With these modifications, the test methods established in this final rule are intended to produce results equivalent to those produced historically under ISO 1217:2009(E). Consequently, if historical test data meets the requirements of the test methods established in this final rule, then manufacturers may use this data for the purposes of representing any metrics subject to representations requirements. Therefore, because the industry standard test method is ISO 1217:2009(E), DOE is

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		using the tolerances specified in ISO 1217:2009(E)."[20] Title 20, CCR, section 1606, requires the submittal of certification data for each appliance that is sold or offered for sale in California and a declaration that the submitted data has been determined from testing in accordance to the test procedure in title 20, CCR, section 1604(s), which is identical to the federal test procedure. The declaration is executed under penalty of perjury. At multiple times during the proceeding, the Energy Commission clarified that reliance on historical test data is acceptable, as long as the requirements in title 20, CCR, sections 1604 and 1606 are met and attested to in the required declaration. Staff stated, at the January 9, 2019, business meeting, that it has no objection to a manufacturer, under penalty of perjury, certifying that their historical ISO 1217:2009 test data is in accordance with the test procedure in CCR, title 20, section 1604 (i.e., the DOE test procedure).[21] DOE's refusal to enforce, as a matter of policy, test procedures adopted in regulations does not mean that states cannot enforce those test procedures at the time they took effect. A manufacturer's decision not to follow that test procedure is a business decision the consequences of which the Commission is not responsible for mitigating.

[20] Department of Energy, Energy Conservation Program: Test Procedures for Compressors, Final Rule, https://www.regulations.gov/document?D=EERE-2014-BT-TP-0054-0023, p. 1076.
[21] Transcript of Energy Commission January 9, 2019, Business Meeting, p. 31.

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	4. 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. Comment acknowledged. No change is necessary. Testing is required for models manufactured on or after January 1, 2022. To reduce the amount of required testing, the regulations permit (1) testing of a basic model and extension of this data to additional models that have identical performance characteristics and (2) the use of alternative efficiency determination methods (AEDMs). AEDMs allow mathematical modeling of the performance of additional models, with differing performance characteristics, based on the tested performance data of a similar model. The manufacturer is responsible for determining if a given model can be certified using the basic model approach, an AEDM, or must be separately tested and certified. Regardless of approach, every unit sold or offered for sale in the state must comply with the energy efficiency standards. The Energy Commission determined that the regulations, including the cost of testing, are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by Public Resources Code (PRC) 25402 (c)(1). Testing must occur at Energy Commission-approved test laboratories. The test laboratory approval process is specified in section 1603 of Title 20 and includes an online application through the Modernized Appliance Efficiency Database System (MAEDbS). Because the regulations had not been adopted yet, compressor test lab certification had not yet been incorporated into MAEDbS. Test laboratories may begin to obtain approval through MAEDbS a few months before the standards compliance date. Tests conducted

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		pursuant to 1604(s) of Title 20 before the test lab is approved by the Commission may be used to certify data after the test lab obtains Commission-approval. Retesting is not necessary in that case. However, as the Energy Commission repeated throughout the proceeding, reliance on historical test data is acceptable, as long as the requirements of the California Code of Regulations (CCR), Title 20, section 1604 and 1606 are met and attested to in the required declaration. Staff stated, at the January 9, 2019, business meeting, "Any test results that are done according to the test procedure, whether they occur before the test lab is approved or after the test lab is approved, is fine for certification to our database. And our regulations are pretty clear on this and this is across all appliances, not specific to compressors."[22] California's regulations are silent on the sampling requirements for testing as a general rule for appliances, but does contain sampling requirements where relevant for specific appliances. The Energy Commission has consistently interpreted its regulations as requiring no more than a single unit to be tested for certification purposes. However, that enforcement testing may require two units to be tested if the first unit fails to meet the efficiency standards or the efficiency levels reported in the Energy Commission's database, with a determination based on the mean value of the two tests.[23]

[22] Transcript of Energy Commission January 9, 2019, Business Meeting, p. 29.
[23] See, e.g., Transcript of Energy Commission January 9, 2019, Business Meeting, p. 31 ("for our regulations we only require testing of a single unit in order to certify that test data to the database, for that model").

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		This is different from the DOE's general requirements, which specify the need for testing two units unless otherwise specified for a specific appliance.[24] For compressors, DOE specifies that manufacturers must randomly select and test "a sample of sufficient size" to ensure that a unit meets the reported efficiency values.[25] However, the Energy Commission did not adopt the DOE's sampling requirements into the regulations with respect to direct testing of compressor models, and therefore the DOE requirement for testing two units does not apply to direct testing. When using an alternative efficiency determination method (AEDM), it is correct that testing of two units is required, as the DOE sampling requirement for AEDMs is incorporated into the Energy Commission's adopted text.[26]
	5. 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.	5. Comment acknowledged. No change is necessary. Title 20, CCR, section 1604(s) incorporates by reference the DOE test procedure for air compressors found in title 10, CFR, Appendix A to subsection T of part 431. Section III.B.2.2. of Appendix A to subsection T of part 431 relates only to the pre-test instructions for adjustment of discharge pressure. Section C of Appendix A to subsection T of part 431 provides the test instructions, including the determination of the maximum full-flow operating pressure. The maximum full-flow operating pressure is defined as

[24] 10 C.F.R. § 429.11(b).
[25] 10 C.F.R. § 492.63(a).
[26] CCR, title 20, section 1604(s)(3) of the adopted regulations require additional testing in Code of Federal Register, title 10, section 429.63 and 429.70 when applying an AEDM.

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		the maximum discharge pressure at which the compressor is capable of operating.
	6. 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.	6. Comment acknowledged. No change is necessary. Energy Commission staff determined that the January 1, 2022, effective date is appropriate because DOE pre-published a Notice of Final Rule on December 5, 2016, and if DOE had published the final rule as scheduled, the effective date would have been early 2022. The Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1). PRC 25402(c)(1) requires that the regulations become effective no sooner than one year after the date of adoption. Although an earlier effective date could yield earlier, and therefore greater energy savings, Energy Commission staff believed that an earlier effective date would increase manufacturer costs and burden and could decrease product availability throughout California. Therefore, an effective date of January 1, 2022, was considered a more appropriate balance of costs and savings.
Bruce C. Mc Fee, Chairman CEO, Sullivan-Palatek, Inc., President, Saylor-Beall Manufacturing Company	1. Three Issues with California Proposal: There are still at least three issues in the proposed regulation that could substantially affect the availability of air compressor models in California.	1. Comment acknowledged. No response required.
	2. ISO-1217: A significant difference exists between the proposed test method and the historical industry test standard using ISO-1217. ISO-1217 allows the manufacturer to state its flow and power usage, but in a test is allowed a tolerance as stated in Table B.2 ….	2. Comment acknowledged. No change is necessary. Title 20, CCR, section 1604(s) incorporates by reference the DOE test procedure for air compressors found in title 10, CFR, Appendix A to subsection T of part 431. The

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	Under the proposed California rule, no tolerance is allowed, instead a 95% confidence level is required from a sample mean assuring that 95% of products provided would meet or exceed a minimum isentropic efficiency standard. This leads to the question whether years of previously published data sheets would be allowed given it might not be possible to convert old numbers with a tolerance into new numbers with a 95% confidence level. If the data sheets are not allowed, it may require more than 10,000 new tests to meet the various horsepower ranges, pressure ranges and selective models.	Energy Commission is preempted from requiring a test procedure different from the federal test procedure. On July 3, 2017, it became mandatory that any manufacturer representations with respect to energy use or efficiency be made in accordance with the results of testing pursuant to the federal test procedure. The only acceptable tolerances from ISO-1217:2009 are those tolerances clearly referenced by the DOE test procedure. Note that DOE modified the tolerances in the test procedure, "in order to align as closely as possible to ISO 1217:2009(E), as amended. With these modifications, the test methods established in this final rule are intended to produce results equivalent to those produced historically under ISO 1217:2009(E). Consequently, if historical test data meets the requirements of the test methods established in this final rule, then manufacturers may use this data for the purposes of representing any metrics subject to representations requirements. Therefore, because the industry standard test method is ISO 1217:2009(E), DOE is using the tolerances specified in ISO 1217:2009(E)."[27] Title 20, CCR, section 1606, requires the submittal of certification data for each appliance that is sold or offered for sale in California and a declaration that the submitted data has been determined from testing in accordance to the test procedure in title 20, CCR, section 1604(s), which is identical to the federal test procedure. The declaration is executed

[27] Department of Energy, Energy Conservation Program: Test Procedures for Compressors, Final Rule, https://www.regulations.gov/document?D=EERE-2014-BT-TP-0054-0023, p. 1076.

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		under penalty of perjury. At multiple times during the proceeding, the Energy Commission clarified that reliance on historical test data is acceptable, as long as the requirements in title 20, CCR, sections 1604 and 1606 are met and attested to in the required declaration. Staff stated, at the January 9, 2019, business meeting, that it has no objection to a manufacturer, under penalty of perjury, certifying that their historical ISO 1217:2009 test data is in accordance with the test procedure in CCR, title 20, section 1604 (i.e., the DOE test procedure).[28]
	3. Lack of Certified Test Capacity: A second issue involves a potential and very major bottleneck in testing. The recognized test lab for CAGI, Intertek in Plano TX performs sample testing of manufacturers as a means to validate manufacturer's data sheets as being reasonable. The lab currently performs about 40 such tests per year. Tests are very detailed and the Intertek charge is $1,200 per occurrence. The test also involves shipment of a compressor to Intertek, and hook up of the air and electrical components prior to running the test. The manufacturer usually sends an engineer to witness the test and provide guidance on the operation of its specific machine. In the event that data from previously published data sheets are not usable for the California rule, a significant expansion of certified test lab capacity will be needed.	3. Comment acknowledged. No change is necessary. The title 20, CCR, section 1603 requirements for testing laboratories are straightforward and non-restrictive. The application process for becoming an approved testing laboratory is simple and once submitted to the Energy Commission, typically takes two business days for approval. Nothing in the regulations requires use of a specific test laboratory, such as CAGI's recognized test lab in Plano, Texas. Testing is required for models manufactured on or after January 1, 2022. To reduce the amount of required testing, the regulations permit (1) testing of a basic model and extension of this data to additional models that have identical performance characteristics and (2) the use of alternative efficiency determination methods (AEDMs). AEDMs allow mathematical modeling of the performance of additional models, with differing

[28] Transcript of Energy Commission January 9, 2019, Business Meeting, p. 31.

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		performance characteristics, based on the tested performance data of a similar model. The manufacturer is responsible for determining if a given model can be certified using the basic model approach, an AEDM, or must be separately tested and certified. Regardless of approach, every unit sold or offered for sale in the state must comply with the energy efficiency standards. The Energy Commission determined that the regulations, including the cost of testing, are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by Public Resources Code (PRC) 25402 (c)(1). Testing must occur at Energy Commission-approved test laboratories. The test laboratory approval process is specified in section 1603 of Title 20 and includes an online application through the Modernized Appliance Efficiency Database System (MAEDbS). Because the regulations had not been adopted yet, compressor test lab certification had not yet been incorporated into MAEDbS. Test laboratories may begin to obtain approval through MAEDbS a few months before the standards compliance date. Tests conducted pursuant to 1604(s) of Title 20 before the test lab is approved by the Commission may be used to certify data after the test lab obtains Commission-approval. Retesting is not necessary in that case. However, as the Energy Commission repeated throughout the proceeding, reliance on historical test data is acceptable, as long as the requirements of the California Code of Regulations (CCR), Title 20, section 1604 and 1606 are met

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		and attested to in the required declaration. Staff stated, at the January 9, 2019, business meeting, "Any test results that are done according to the test procedure, whether they occur before the test lab is approved or after the test lab is approved, is fine for certification to our database. And our regulations are pretty clear on this and this is across all appliances, not specific to compressors."[29] California's regulations are silent on the sampling requirements for testing as a general rule for appliances, but does contain sampling requirements where relevant for specific appliances. The Energy Commission has consistently interpreted its regulations as requiring no more than a single unit to be tested for certification purposes. However, that enforcement testing may require two units to be tested if the first unit fails to meet the efficiency standards or the efficiency levels reported in the Energy Commission's database, with a determination based on the mean value of the two tests.[30] This is different from the DOE's general requirements, which specify the need for testing two units unless otherwise specified for a specific appliance.[31] For compressors, DOE specifies that manufacturers must randomly select and test "a sample of sufficient size" to ensure that a unit meets the reported efficiency values.[32] However, the Energy Commission did not adopt the DOE's

[29] Transcript of Energy Commission January 9, 2019, Business Meeting, p. 29.
[30] See, e.g., Transcript of Energy Commission January 9, 2019, Business Meeting, p. 31 ("for our regulations we only require testing of a single unit in order to certify that test data to the database, for that model").
[31] 10 C.F.R. § 429.11(b).
[32] 10 C.F.R. § 492.63(a).

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		sampling requirements into the regulations with respect to direct testing of compressor models, and therefore the DOE requirement for testing two units does not apply to direct testing. When using an alternative efficiency determination method (AEDM), it is correct that testing of two units is required, as the DOE sampling requirement for AEDMs is incorporated into the Energy Commission's adopted text.[33]
	4. Higher pressure compressors may not pass the standard: A third issue involves the substantial known difference in isentropic efficiency between pressure ranges. Many CAGI members publish data sheets at different pressures. A common method is to produce the performance at 125 psi, then a very similar model with similar horsepower at 175 psi. The proposed isentropic efficiency curve does not allow any deviation for pressure within a given flow, despite that fact that data sheets when converted into isentropic efficiency show a significant efficiency drop at higher pressures. If no allowance is provided to accommodate higher pressures, California may learn that it is hard to find approved compressors to operate at pressures of 175 psi and higher.	4. Comment acknowledged. No change is necessary. The scope of the regulation is for air compressors operating between 75 and 200 pounds per square inch gauge (psig), that are rotary, lubricated, air or liquid cool air compressors driven with a fixed or variable speed brushless electric motor. The range of 75-200 psig was based on industry recommendation, "DOE defers to the recommendation of CAGI, Ingersoll Rand, Sullivan-Palatek, and Sullair, and concludes that package isentropic is relatively independent of full-load operating pressure at full-load operating pressures between 75 and 200 psig."[34] In the DOE proceeding, commenter stated, "**I am in full support of all the CAGI comments.**"[35] (emphasis in original). In the DOE proceeding, CAGI commented, "We recommend for purposes of the

[33] CCR, title 20, section 1604(s)(3) of the adopted regulations require additional testing in Code of Federal Register, title 10, section 429.63 and 429.70 when applying an AEDM.
[34] Department of Energy Pre-Publication Final Rule, Energy Conservation Program: Energy Conservation Standards for Air Compressors, https://efiling.energy.ca.gov/GetDocument.aspx?tn=225912-5&DocumentContentId=56596, p.66.
[35] In response to Docket Number [EERE–2013–BT–STD–0040] RIN 1904-AC83, Sullivan-Palatek, https://www.regulations.gov/document?D=EERE-2013-BT-STD-0040-0051, p. 1.

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		energy efficiency standards a range of 75 to 200 psig."[36] No information or data was introduced into the record of the proceeding that was specific to operation of compressors at 175 psig and higher. The Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	5. Given the number of complexities, if CEC must regulate air compressors, we recommend That the timeline be extended from three years to five years for implementation, previous ISO-1217 test results be accepted, and a reduced standard be applied to higher pressure compressors after a formal analysis of existing data sheets is considered.	5. Comment acknowledged. No change is necessary. Energy Commission staff determined that the January 1, 2022, effective date is appropriate because DOE pre-published a Notice of Final Rule on December 5, 2016, and if DOE had published the final rule as scheduled, the effective date would have been early 2022. The Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1). PRC 25402(c)(1) requires that the regulations become effective no sooner than one year after the date of adoption. Although an earlier effective date could yield earlier, and therefore greater energy savings, Energy Commission staff believed that an earlier effective date would increase manufacturer costs and burden and could decrease product availability throughout California. Therefore, an effective date

[36] Docket # EERE-2013-BT-STD-0040, (RIN) 1904-AC83 Comments from the Compressed Air and Gas Institute Regarding Notice of Proposed Rulemaking, Energy Conservation Standards for Compressors, Compressed Air and Gas Institute, https://www.regulations.gov/document?D=EERE-2013-BT-STD-0040-0052, p. 9.

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		of January 1, 2022, was considered a more appropriate balance of costs and savings. For previous ISO-1217 data, see response to 2, above. For higher pressure compressors, see response to 4, above.
Bruce C. Mc Fee, Chairman CEO, Sullivan-Palatek, Inc., President, Saylor-Beall Manufacturing Company	These remarks are in response to comments by…ASAP/ACEEE, California Investor Owned Utilities, and NEEA …who have all made recommendations that CEC include reciprocating compressors in their regulation. Part of the justification of these associations comes from an apparent misunderstanding of energy utilization by compressors. The statement by ASAP/ACEEE in their Dec. 21, 2018 comment leads one to believe that reciprocating compressors are a major source of energy consumption. As shown by their comment.….<<< This is despite the fact that the shipments analysis included in the Technical Support Document (TSD) for DOE's rulemaking found that reciprocating compressors make up more than 97% of all compressors shipped in the US>>>	Comment acknowledged. No change is necessary. After considering all the information relied upon, the information submitted to the record, and all the comments received, the Energy Commission chose not to include reciprocating compressors in the scope of the regulation. The Energy Commission may establish test procedures and efficiency standards for reciprocating compressors at a future time, as these are not federally covered products and may be an opportunity for additional energy savings.
Louis Starr, P.E. Northwest Energy Efficiency Alliance (NEEA)	1. Provide test and list requirements for reciprocating air compressors.	1. Comment acknowledged. No change is necessary. After considering all the information relied upon, the information submitted to the record, and all the comments received, the Energy Commission chose not to include reciprocating compressors in the scope of the regulation. The Energy Commission may establish test procedures and efficiency standards for reciprocating compressors at a future time, as these are not federally covered products and may be an opportunity for additional energy savings.

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	2. Use of Legacy Data for Compliance. The CEC has adopted a DOE test procedure that uses a DOE approach to sampling procedures and tolerances which are typically the same for most products. The results of the DOE approach often will not allow the use of narrowly defined legacy data developed by industry to demonstrate compliance with the rating. This approach makes sense if the rating procedure results in different ratings for legacy products but if it does not, it is not clear the value that is provided in retesting legacy products. New products would be tested to the new test procedure with DOE sampling procedures and tolerances but not narrowly defined industry testing of legacy products thus reducing testing burden. We would suggest CEC review California's ability to adopt a modified DOE test procedure and determine if the resulting ratings are the same for the DOE approach as narrowly defined industry test procedures.	2. Comment acknowledged. No change is necessary. Title 20, CCR, section 1604(s) incorporates by reference the DOE test procedure for air compressors found in title 10, CFR, Appendix A to subsection T of part 431. The Energy Commission is preempted from requiring a test procedure different from the federal test procedure. On July 3, 2017, it became mandatory that any manufacturer representations with respect to energy use or efficiency be made in accordance with the results of testing pursuant to the federal test procedure. Title 20, CCR, section 1606, requires the submittal of certification data for each appliance that is sold or offered for sale in California and a declaration that the submitted data has been determined from testing in accordance to the test procedure in title 20, CCR, section 1604(s), which is identical to the federal test procedure. The declaration is executed under penalty of perjury. At multiple times during the proceeding, the Energy Commission clarified that reliance on historical test data is acceptable, as long as the requirements in title 20, CCR, sections 1604 and 1606 are met and attested to in the required declaration.
Steve Eaton, Ingersoll Rand	Clarifications Sought Regarding Enforcement of the Appliance Efficiency Regulations for Commercial and Industrial Air Compressors. In the DOE Pre-Publication *Federal Register* Final Rule, Section III(G)(1)(C) states: *DOE understands that manufacturers of compressors may have historical test data that were developed based on ISO*	Comment acknowledged. No change is necessary. Title 20, CCR, section 1604(s) incorporates by reference the DOE test procedure for air compressors found in title 10, CFR, Appendix A to subsection T of part 431. The Energy Commission is preempted from requiring a test procedure different from the federal test procedure. On July 3,

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	1217:2009(E). If historical test data is based on the same methodology being adopted in this final rule, then manufacturers may use this data for the purposes of representing any metrics subject to the representations requirements. This acknowledgment is critical, as it allows manufacturers to rely on existing test data in order to establish ratings based on historical data, so long as it is representative of the values expected should the equipment be tested under the new Test Procedures. In order to comply with appliance efficiency regulations within a reasonable amount of time, we must be able to rely on existing test data prior to the enforcement of the Test Procedures. The time and resources that would be required for the industry to re-test all of its equipment would place a significant burden on manufacturers, and it is not possible to complete this process by January 1, 2022. Ingersoll Rand requests that CEC make the same clarification as Section III(G)(1)(C) in the DOE Pre-Publication *Federal Register* Final Rule regarding enforcement of the appliance efficiency regulations in California.	2017, it became mandatory that any manufacturer representations with respect to energy use or efficiency be made in accordance with results from testing pursuant to the federal test procedure. Title 20, CCR, section 1606, requires the submittal of certification data for each appliance that is sold or offered for sale in California and a declaration that the submitted data has been determined from testing in accordance to the test procedure in title 20, CCR, section 1604(s), which is identical to the federal test procedure. The declaration is executed under penalty of perjury. At multiple times during the proceeding, the Energy Commission clarified that reliance on historical test data is acceptable, as long as the requirements in title 20, CCR, sections 1604 and 1606 are met and attested to in the required declaration. Staff stated, at the January 9, 2019, business meeting, that it has no objection to a manufacturer, under penalty of perjury, certifying that their historical ISO 1217:2009 test data is in accordance with the test procedure in CCR, title 20, section 1604 (i.e., the DOE test procedure).[37] DOE's refusal to enforce, as a matter of policy, test procedures adopted in regulations does not mean that states cannot enforce those test procedures at the time they took effect. A manufacturer's decision not to follow that test procedure is a business decision the consequences of which the Commission is not responsible for mitigating.

[37] Transcript of Energy Commission January 9, 2019, Business Meeting, p. 31.

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Chris Granda, Appliance Standards Awareness Project (ASAP) And American Council for an Energy Efficient Economy (ACEEE)	We recommend that CEC expand the scope of this proposal to require manufacturers to test and list larger reciprocating compressors…Given the variety of reciprocating compressors on the market, and the lack of data about their energy performance, we agree that it would not be appropriate for CEC standards to subject this class of equipment to energy efficiency requirements at this time. However, consistent with CEC's proposed coverage for rotary compressors, we recommend that CEC expand the Proposed Express Terms to require manufacturers of reciprocating compressors that: 1. Have full-load actual volume flow rate greater than or equal to 35 cubic feet per minute (cfm), or are distributed in commerce with a compressor motor nominal horsepower greater than or equal to 10 horsepower (hp), 2. Have a full-load actual volume flow rate less than or equal to 1,250 cfm, or are distributed in commerce with a compressor motor nominal horsepower less than or equal to 200 hp, and 3. Are driven by a three-phase electric motor, to base energy performance claims for their products on the results of CEC's proposed compressors test procedure, and to list their products in the Modernized Appliance Efficiency Database System. Requiring the manufacturers of large reciprocating compressors to test and list their products would be an important step toward a better understanding this class of equipment, and would provide consistent energy performance data to enable minimum efficiency requirements eventually to be set based on empirical information. By restricting a test and list requirement to larger models, which account for most of the energy consumption by reciprocating compressors, CEC would exclude the vast majority of models available and minimize the testing burden on industry.	Comment acknowledged. No change is necessary. After considering all the information relied upon, the information submitted to the record, and all the comments received, the Energy Commission chose not to include reciprocating compressors in the scope of the regulation. The Energy Commission may establish test procedures and efficiency standards for reciprocating compressors at a future time, as these are not federally covered products and may be an opportunity for additional energy savings.

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Kris Knuffman, Quincy Compressors	Mandating Testing and Listing of Reciprocating Air Compressors in California Will Reduce Available Reciprocating Compressor Models But Generate Little Data. The ASAP-ACEE comment asks the Commission to expand its proposed rule to mandate the testing and listing of reciprocating air compressors of 10 horsepower size or larger. Quincy makes reciprocating air compressors as well as rotary air compressors. Quincy submits that the expansion of the proposed rule to require reciprocating compressor testing is costly, unwise, and likely to lead to withdrawal of many such models from the California market without generating any significant usable efficiency data. Quincy has conducted a significant number of tests of rotary air compressor efficiency in the past two years at its Bay Minette, Alabama manufacturing plant. There are established test protocols to be used, protocols keyed to rotary air compressors, NOT reciprocating compressors. Significantly, ASAP-ACEEE asks for the application of "CEC's proposed compressors test procedure," without addressing the very significant problems with applying that suspended DOE test rule. At the outset, the Test Rule is expressly limited to "rotary air compressors," NOT reciprocating compressors.	Comment acknowledged. No change is necessary. After considering all the information relied upon, the information submitted to the record, and all the comments received, the Energy Commission chose not to include reciprocating compressors in the scope of the regulation. The Energy Commission may establish test procedures and efficiency standards for reciprocating compressors at a future time, as these are not federally covered products and may be an opportunity for additional energy savings.
Prepared by Brian Boyce of Energy Solutions for California Investor-owned Utilities: Pacific Gas and Electric, Southern California Edison	1. Efficiency Level: Recommends higher efficiency of TSL 3	1. Comment acknowledged. No change is necessary. After considering all the information relied upon, the information submitted to the record, and all the comments received, the Energy Commission chose to propose an efficiency standard set at TSL 2. This is the same efficiency standard proposed in DOE's pre-publication final rule, a document relied upon for this proceeding. The Energy Commission determined that the

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and San Diego Gas and Electric.		regulations will save energy, are based on feasible efficiencies, and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	2. Effective Date: Recommends that the Energy Commission require compressor standards enforcement one year after adoption.	2. Comment acknowledged. No change is necessary. Energy Commission staff determined that the January 1, 2022, effective date is appropriate because DOE pre-published a Notice of Final Rule on December 5, 2016, and if DOE had published the final rule as scheduled, the effective date would have been early 2022. Additionally, although an earlier effective date could yield earlier, and therefore greater energy savings, Energy Commission staff believed that an earlier effective date would increase manufacturer costs and burden and could decrease product availability throughout California. Therefore, an effective date of January 1, 2022, was considered a more appropriate balance of costs and savings.
	3. Compressor Annual Operating Hours: … U.S. DOE has comprehensively incorporated all information and data presented to it during its NOPR and public comment period into the Final Rule analysis. Raising issues that have already been addressed by U.S. DOE is unnecessary and does not contribute productively to the Energy Commission's rulemaking process.	3. Comment acknowledged. General comment. No response necessary.
	4. Test and List for Additional Categories of Compressors: Require test and list for reciprocating compressors, rotary non-lubricated compressors and rotary lubricated compressors between one and ten	4. Comment acknowledged. No change is necessary. After considering all the information relied upon, the information submitted to the record, and all the comments received, the Energy

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	hp, and rotary lubricated compressors between 200 and 500 hp.	Commission chose not to include these other classes of compressors in the scope of the regulation. The Energy Commission may establish test procedures and efficiency standards for these other classes of compressors at a future time, as these are not federally covered products and may be an opportunity for additional energy savings.
	5. Basic Models and AEDM rules: The Energy Commission has adopted both U.S. DOE's basic model and AEDM definitions as ways to ease test burden for manufacturers (CEC 2018a). The Statewide CASE Team agrees with the Energy Commission's decision to align with the U.S. DOE test procedure and allow manufacturers to use basic models and AEDMs to meet compliance requirements. These options reduce test burden but are crafted in a way that do not diminish consumer confidence in the efficiency ratings.	5. Comment acknowledged. These comments support the proposed regulations. No response necessary.
	6. Existing Compressor Test Results: The Statewide CASE Team agrees with the Energy Commission's decision to allow manufacturers to use older test data for Title 20 compliance, so long as it meets the U.S. DOE test procedure requirements.	6. Comment acknowledged. General comment. No response necessary.
Somach, Simmons & Dunn for Atlas Copco	1. Atlas Copco North America to ask that the California Energy Commission postpone consideration of the proposed compressor efficiency rules from the agenda of the January 9, 2019 Commission business meeting. Atlas Copco requests that the matter be removed from that January 9 business meeting agenda in order for the Commission to avoid prejudging the merits of the proposed language	1. Comment acknowledged. No change. After careful and meaningful consideration of all comments received during the 45-day public comment period, which closed on December 31, 2018, and the public hearing which was held on January 3, 2019, Energy Commission staff determined that no changes would be made to the originally proposed regulatory language and as

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	submitted in Atlas Copco's comments submitted on December 21, 2018 in connection with this rulemaking….	such a 15-day comment period was not required. The Commissioners had adequate time to review the entire record for the proceeding, including all public comments from the 45-day comment period and the public hearing, and to hear and discuss additional comments and issues from stakeholders at a publically noticed Energy Commission Business Meeting prior to voting to adopt the staff's proposed regulatory language. The Commissioners have the ability to initiate 15-day public comment period, regardless of staff's recommendation, but did not choose to do so. The agenda for the Energy Commission Business Meeting must be published at least ten days prior to the Business Meeting as required by the Bagley-Keene Open Meeting Act. The Chair of the Energy Commission has discretion to remove or continue agenda items as necessary. Publication of the agenda for the Business Meeting is entirely independent of the Commissioners' consideration and review of the entire record for the proceeding.
	2. Because Commission rules require that the wording changes suggested by Atlas Copco be subject to a new comment period of fifteen days, notice of potential adoption of the rules on January 9, 2019, seemingly forecloses the possibility the Commission will meaningfully consider the proposed revision sought by Atlas Copco.	2. The Chair of the Energy Commission has discretion to remove or continue agenda items as necessary. Publication of the agenda for the Business Meeting is entirely independent of the Commissioners' consideration and review of the entire record for the proceeding. Because changes suggested by Atlas Copco were not accepted, a 15-day comment period was not required. If it had determined to proceed with15-day language, the Energy Commission could have postponed hearing the item to allow for the public

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		comment period to proceed, or could have directed the publication of 15-day language at the Business Meeting. It did neither, as no changes were deemed necessary.
Somach, Simmons & Dunn	1. This letter responds to proposals made in section 2.4 of the December 31, 2018 Comments by the California Investor Owned Utilities (IOUs) to expand the proposed rules to require the testing and listing of additional categories of air compressors including: • Reciprocating compressors between one and 500 horsepower (hp); • Non-lubricated compressors between one and 500 hp; • Rotary lubricated compressors between one and 10 hp; • Rotary lubricated compressors between 200 and 500 hp. <u>Reciprocating Compressors</u> Quincy Compressor responded in its December 31, 2018 comments to address the reciprocating compressor proposal, and to explain the significant problems with that approach. <u>Non-Lubricated (aka Oil-Free) Compressors</u>. … if a test-and-list requirement is imposed on oil-free rotary air compressors, that requirement will create a serious competitive disadvantage for the makers of oil-free rotary compressors, and result in an unfair advantage in California for the makers of turbo compressors. This situation will also create problems for California businesses seeking such equipment without improving energy efficiency. 2. The November 16 Proposal states that 6,000 compressor units per year covered by this proposal	1. Comment acknowledged. No change is necessary. After considering all the information relied upon, the information submitted to the record, and all the comments received, the Energy Commission chose not to include these other classes of compressors in the scope of the regulation. The Energy Commission may establish test procedures and efficiency standards for these other classes of compressors at a future time, as these are not federally covered products and may be an opportunity for additional energy savings. 2. Comment acknowledged. No change is necessary. Based on this comment, Energy

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	are sold each year in California. Initial Statement of Reasons (ISOR), p. 10. Atlas Copco submits, for reasons explained below, that this 6,000 unit figure is substantially overstated, because it is much larger than the figures which can be derived from the DOE rulemaking record on which the November 16 Proposal relies as its evidentiary basis.	Commission staff recalculated the estimated annual California sales using commenter's suggested approach. This resulted in a lower estimate of annual California sales of compressors subject to the regulations. The estimate of annual California sales is used to determine annual statewide energy savings and has no impact on the cost-effectiveness calculations and technical feasibility determinations that were completed by staff. Although the statewide energy savings estimate is lower with lower shipments, the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
Russell V. Randle of Miles and Stockbridge on behalf of Atlas Copco North America	1. The November 16 Proposal Substantially Overstates the Cost Savings and Emission Reductions Likely to Result from Its Adoption.	1. Comment acknowledged. No change is necessary. Based on this comment, Energy Commission staff recalculated the estimated annual California sales using commenter's suggested approach. This resulted in a lower estimate of annual California sales of compressors subject to the regulations. The estimate of annual California sales is used to determine annual statewide energy savings and has no impact on the cost-effectiveness calculations and technical feasibility determinations that were completed by staff. Although the total statewide energy savings estimate is lower with lower shipments, the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	2. While Atlas Copco supports the efficiency limits contained in the November 16 Proposal, Atlas Copco is opposed to adoption of the more	2. Comment acknowledged. Comment accepted. No change will be made. After considering all the information relied upon, the information submitted

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	stringent efficiency standard set forth by the IOU March 2018 comment.	to the record, and all the comments received, the Energy Commission chose to propose an efficiency standard set at trial standard level 2 (TSL 2). This is the same efficiency standard proposed in DOE's pre-publication final rule, a document relied upon for this proceeding. The Energy Commission determined that the regulations are based on feasible efficiencies and do not result in any added total costs for consumers over the designed life of the appliances, as required by PRC 25402(c)(1).
	3. Atlas Copco strongly urges revision of the proposed language of Section 1606 the November 16 Proposal's certification and testing provisions in order to expressly allow the use of prior test data both from prior ISO1217:2009 testing and from previous tests using the 2017 DOE Test Method. The ISO1217 data, like the 2017 DOE Test data, should also be authorized for use in applying AEDMs, the mathematical forecasts of compressor efficiency to be used in forecasting the efficiency of models made infrequently.	3. Comment acknowledged. No change is necessary. Title 20, CCR, section 1604(s) incorporates by reference the DOE test procedure for air compressors found in title 10, CFR, Appendix A to subsection T of part 431. The Energy Commission is preempted from requiring a test procedure different from the federal test procedure. On July 3, 2017, it became mandatory that any manufacturer representations with respect to energy use or efficiency be made in accordance with results from testing pursuant to the federal test procedure. Title 20, CCR, section 1606, requires the submittal of certification data for each appliance that is sold or offered for sale in California and a declaration that the submitted data has been determined from testing in accordance to the test procedure in title 20, CCR, section 1604(s), which is identical to the federal test procedure. The declaration is executed under penalty of perjury. At multiple times during the proceeding, the Energy Commission clarified that reliance on

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		historical test data is acceptable, as long as the requirements in title 20, CCR, sections 1604 and 1606 are met and attested to in the required declaration. Staff stated, at the January 9, 2019, business meeting, that it has no objection to a manufacturer, under penalty of perjury, certifying that their historical ISO 1217:2009 test data is in accordance with the test procedure in CCR, title 20, section 1604 (i.e., the DOE test procedure).[38] DOE's refusal to enforce, as a matter of policy, test procedures adopted in regulations does not mean that states cannot enforce those test procedures at the time they took effect. A manufacturer's decision not to follow that test procedure is a business decision the consequences of which the Commission is not responsible for mitigating. Regarding usage of previous tests using the 2017 DOE test method, note that testing must occur at Energy Commission-approved test laboratories. The test laboratory approval process is specified in section 1603 of Title 20 and includes an online application through the Modernized Appliance Efficiency Database System (MAEDbS). Because the regulations had not been adopted yet, compressor test lab certification had not yet been incorporated into MAEDbS. Test laboratories may begin to obtain approval through MAEDbS a few months before the standards compliance date. Tests conducted pursuant to 1604(s) of Title 20 before the test lab is approved by the Commission may be used to certify data after the test lab obtains Commission-approval. Retesting is not necessary in that case.

[38] Transcript of Energy Commission January 9, 2019, Business Meeting, p. 31.

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		However, as the Energy Commission repeated throughout the proceeding, reliance on historical test data, including previous tests using the 2017 DOE test method, is acceptable, as long as the requirements of the California Code of Regulations (CCR), Title 20, section 1604 and 1606 are met and attested to in the required declaration. Staff stated, at the January 9, 2019, business meeting, "Any test results that are done according to the test procedure, whether they occur before the test lab is approved or after the test lab is approved, is fine for certification to our database. And our regulations are pretty clear on this and this is across all appliances, not specific to compressors."[39]
Somach, Simmons & Dunn	Comment letter received by docket on January 8, 2019	Comment acknowledged. Public comment period ended on December 31, 2018. Public hearing was on January 3, 2019. No response required .
Quincy Compressor	Comment letter received by docket on January 8, 2019	Comment acknowledged. Public comment period ended on December 31, 2018. Public hearing was on January 3, 2019. No response required.
Somach, Simmons & Dunn	Comment letter received by docket on February 1, 2019	Comment acknowledged. Public comment period ended on December 31, 2018. Public hearing was on January 3, 2019. No response required.

[39] Transcript of Energy Commission January 9, 2019, Business Meeting, p. 29.