North American Association of Food Equipment Manufacturers
161 N. Clark Street, Suite 2020
Chicago, IL 60601

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By Email: CRE-2010-STD-0003@ee.doe.gov

U.S. Department of Energy
Building Technologies Program
100 Independence Avenue, SW
Washington, DC 20585-0121

RE: Commercial Refrigeration Equipment Energy Conservation Standards Rulemaking, Docket Number EERE-2010-BT-STD-003, Regulatory Identification Number (RIN) 1904-AC19

The North American Association of Food Equipment Manufacturers (NAFEM) supports measures to increase the efficiency of products in the marketplace and promoting energy efficiency generally. The association's members constantly seek opportunities to improve equipment, in response to market demands and as innovative means of product improvement. Furthermore, NAFEM members actively participate in Energy Star in recognition of the role of voluntary, market-driven incentives for improving the efficiency of commercial refrigeration as well as a range of commercial and consumer products.

With these comments NAFEM expresses concerns that the standards proposed in the NOPR are not technologically feasible and that by virtue of the Department's inadequate market analysis, the standards will not achieve the stated energy consumption savings. The NAFEM is especially concerned with assumptions, conclusions and suggestions in the Market and Technology

Analyses and the proposed rule's failure to comply with Executive Orders 12866 and 13563. NAFEM urges the Department to take each of the following points under consideration before finalizing this rule making.

I. Technology Assessment

The technology assessment completed by the Department should be revisited and reconsidered before finalizing this rule. The proposed design options do not meet the Department's own standard for a technologically feasible option. Additionally, the assumptions behind many conclusions were faulty, relied on old data and did not take into account the conditions present in the market today. The assessment suggests manufacturers will be able to achieve the stringent TSL-4 efficiency standards proposed in the NOPR with technology that is not available and not currently being developed. The result of this unrealistic standard is that the manufacturers will not be able to comply with this standard within the allotted time span, despite their best efforts.

In addition to being technologically feasible, a design option must satisfy the following criteria listed below.

1. Practicability to manufacture, install, or service;
2. Adverse impacts on product utility or availability; and
3. Adverse impacts on health or safety.[1]

As outlined below, the design options suggested by the Department to comply with this rulemaking also fail to satisfy these criteria. It is not feasible to manufacture a high-efficiency refrigerator that will comply with this rule because the technology does not exist, the burden would be too high to develop the technology required and many design options do not incorporate marketplace realities. Furthermore, the current rulemaking will result in adverse impacts on product utility and possibly on health and safety.

1. Unavailable Technology

The Department states in the TSD Engineering Analysis that to be considered a technologically feasible design option in the NOPR, the maximum technologically feasible level must be physically demonstrated in each option in at least prototype form. In the public meeting on October 3rd the Department stated that there was not a physical representation of several design options operating at the maximum technologically feasible level.[2] The Department stated that there was not even a prototype in existence that would meet the specifications of the analysis.

[1] 10 CFR part 430, subpart C, appendix A, section 4(a)(4)(ii)-(iv).
[2] 2013-1003 Transcript EERE-2010-BT-STD-0003-0062, p. 68-69.

Therefore the Department failed to meet its own standard for technologically feasible design options. Given this failure, it is clear that the TSL-4 standard is too stringent a standard to implement in the rule. The TSL-4 standard should be replaced with a standard that is cost-effective and technologically feasible.

A survey of NAFEM members established that no member manufacturer was able to identify current technology options or prototype designs of the suggested design options that would create enough energy savings to reach the rulemaking's efficiency requirements.[3] NAFEM urges the Department to consider the specific comments of manufacturers regarding specific product categories. For purposes of illustration, NAFEM notes that the Department's assumption regarding compressor efficiency is invalid. In the October 3rd public meeting DOE representatives stated that their analysis assumed there would only be a 5% increase in the price of compressors to achieve a 10% increase in compressor efficiency. As one manufacturer explains in its comments, this dramatic efficiency improvement of mature compressor technology is not feasible and would currently exist were it technologically feasible.[4]

2. Unintended Consequences

The primary purpose of commercial refrigeration products is to ensure that the user is able to keep items chilled to a specific temperature. It is particularly important for commercial refrigeration equipment to have goods stored at a level that meets federal safety requirements, preserves goods as long as possible, and provides goods at the optimum temperature for consumption by their users. Energy efficiency standards must factor in the end-user needs and functionality of each type of refrigeration unit. NAFEM is a strong proponent of improving energy efficiency measures so long as they do not impede the natural flow of the marketplace. Not only are the proposed standards not technologically feasible, but they also impair manufacturers' ability to offer quality products to customers at a reasonable price, with upgrade in efficiencies as technology allow and the marketplace will accept.

The Department failed to consider the ramifications of the proposed energy efficiency standards on a variety of end-users. The effect on restaurants, grocery stores, and convenience stores will be substantial. These businesses have limited floor space and must optimize each square foot for storage and display. For example, the decreased internal volume and increased footprint of the equipment resulting from an additional 1.25 inches of insulation will require these users to reconfigure the layout of their kitchens, store fronts and aisles in order to accommodate the same amount of goods. The users' limited facility space and decreased storage and display capacity will likely result in a limitation of the products offered for sale by these users. As a practical

[3] NAFEM Member calls, 10/1-11/9/2013; Danfoss Comments; Traulsen Comments.
[4] Danfoss Comments.

matter, the hypothetical models built by the Department would in many instances have no market, because they would not meet the needs of the end-user.[5] NAFEM members work everyday, and certainly with the evolution of every new model, to both meet the market demands for greater energy efficiency and the real world requirements of the marketplace.

A. Food Safety

The possible negative effects of implementing specific, or a combination of, design options on food safety were not fully evaluated in the Department's analysis. A critical issue in commercial refrigeration is ensuring that the equipment cools food products adequately to ensure food safety. NAFEM members have heard concerns from customers and end-users that implementing certain, or a combination of, design options may result in inconsistent temperatures in the case that could lead to food safety issues. The Department fails to address this important issue, both by virtue of its inadequate outreach to end-user stakeholders and in its general misread of the design complexities manufacturers must take into consideration with each and every category of commercial refrigeration..

B. Specific Technologies

Data issues and inaccurate assumptions are robustly discussed in the comments of individual manufacturers.[6] However, NAFEM is compelled to point out, for purposes of illustration, two examples of faulty technological assumptions and a general misread of the marketplace.

a. Insulation

The addition of insulation to will have one of two consequences: additional insulation either increases the overall dimensions of the product, the products footprint, or it reduces the internal refrigeration space available. Both have negative consequences in terms of the end-user's ability to use the product in existing space. As a practical matter users seek equipment that will meet their limited floor space and maximize the available refrigeration volume. While these two dimensions are not incompatible with improved energy consumption improvements, the Department's proposed standards reveal little or no consideration of these constraints and the ability of available technology to work within these constraints.

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[5] A less obvious example is the use of refrigeration equipment by florists. Florists are a group of end-users that are entirely dependent on commercial refrigeration equipment from the time their product is harvested to the time the flowers are sold it is crucial that the refrigerator stays at a consistent temperature. The proposed energy efficiency standard requires design options that would make the temperature vary enough to negatively impact the quality of the product. Society of American Florists Comments.

[6] Danfoss Comments; Traulsen ITW-FEG, LLC Comments.

NAFEM also notes, as is revealed in other manufacturer comments, that the Department's estimates for the thickness of insulation required to meet the NOPR standard is inaccurate. The Department used assumed R values to arrive at their estimate. The industry standard for assessing insulation is determined by a calculation using the 'k factor' instead of an assumed R value. The conversion of the Department assumed R value to the industry standard k factor showed that 1.25 inches of insulation would be necessary to achieve the energy savings required by the NOPR. [7] This results in a remarkable 30% loss of interior volume or an increased footprint to accommodate the increased insulation.[8] In the real world the significant increase in insulation and reduction in storage capacity results in few options for users to get the same storage space they currently require. First, users may purchase larger appliances or more than one appliance to get the same storage capacity of current models. Another likely option is that the user will make their current, less efficient refrigerator last longer or purchase a large, less efficient refurbished model. All of these options negate any efficiencies gained and will result in higher energy consumption than if the Department implemented a less stringent efficiency standard than currently identified in the NOPR.[9]

b. Doors

The Department identifies adding a third panel or a film to doors as a measure to increase energy savings. NAFEM members strongly assert that this design option is not workable in the real world marketplace. The end-user considers and installs commercial refrigeration units not only as storage of products, but also as display for the goods they sell. Therefore, in the retail setting, it is critical that consumer be able to clearly see the products displayed and organized in the cases and on the shelves of various categories of refrigerators.

The Department's design option for a third panel or film will have unintended consequences that negate any energy savings potential identified in the NOPR. Adding a third panel to doors will reduce visibility, impair the end-user's ability to sell goods to customers through the case, and will likely result in longer periods of time with the door open.[10] It will also result in many users moving away from the use or purchase of refrigerators with doors to less-efficient open refrigerators. For example, end-users who sell dairy products are increasingly asking for products with doors to store and display goods. These end-users will no longer want refrigerators with doors with the price increase and impaired visibility that the proposed design options create.[11]

[7] NAFEM Member Call 11/8/13, Charlie Hon, True.
[8] NAFEM Call 11/8/2013, Charlie Hon, True; Bill Sickles of InterMetro.
[9] NAFEM Member Call 11/8/2013, Charlie Souhrada.
[10] NAFEM Member Call 11/8/2013, Dairy discussion.
[11] NAFEM Member Call 11/8/2013 Dairy discussion.

The triple-pane argon-filled glass doors are also illustrative of the Departments misread of the marketplace and needs of the end-user in that the Department failed to consider the added weight to the door, which will require complete redesign of the case. The Department also did not consider the impact of this technology on sliding doors. NAFEM urges the Department to consider the comments of certain manufacturers for a thorough discussion of the engineering difficulties associated with this design option.

NAFEM members who manufacture this category conclude that there is no real energy consumption advantage to result from the use of this technology; however, its use will reduce cabinet space, reducing internal capacity, thereby requiring users to make up that loss with additional cabinetry, with costs associated with additional equipment and floor space.

On the point of internal volume, the Department uses linear feet of doors to estimate the total market, while the industry uses volume (refrigeration capacity). NAFEM notes that one significant end-user has stated that it alone would represent the total linear feet used by the Department. If the Department has under-estimated the market, not only is its analysis of market impact incorrect (under-representing the impact), but also its estimate of reduced energy consumption is flawed. A larger market would be able to net total reduced energy consumption with more realistic proposed standards.

II. Market Assessment

The Department's market assessment contains several critical flaws. The Department should reevaluate several factors of the assessment before moving forward in the rulemaking process. Most importantly, the Department failed to establish that the regulation is economically justified. The presumption that "the additional cost to the user of purchasing a product complying with an energy conservation standard level will be less than three times the value of the energy savings during the first year that the user will receive as a result of the standard as calculated under the applicable test procedure" is inaccurate.

The Department is required to consider the following six factors to determine whether a regulation is economically justified.[12]

1. The economic impact of the standard on manufacturers and consumers of the equipment subject to the standard;
2. The savings in operating costs throughout the estimated average life of the covered equipment in the type (or class) compared to any increase in the price,

[12] 42 U.S.C. 6295(o)(2)(B)(i)(I)-(VII).

initial charges, or maintenance expenses for the covered equipment that are likely to result from the imposition of the standard;

3. The total projected amount of energy or, as applicable, water savings likely to result directly from the imposition of the standard;
4. Any lessening of the utility or the performance of the covered equipment likely to result from the imposition of the standard;
5. The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard;
6. The need for national energy and water conservation.

A brief evaluation of the factors shows that the Department failed to show that the considerable costs of the regulation are economically justified. First, the economic impact on manufacturers and end-users, particularly small businesses, is considerable and higher than the Department estimates because the design options are not technologically feasible. Second, the utility and performance of the equipment will be significantly impaired as a direct result of the imposition of the standard recommended in the NOPR because the efficiency standards are so stringent that the design options required for compliance limit the chilling ability of the refrigerators. Finally, the TSL-4 standard identified in the NOPR would result in a lessening of competition because the costs of researching and developing design options that do not even exist in prototype form will drive small businesses away from production of the commercial refrigeration goods covered under this rulemaking.

The market assessment contains several other flaws that are briefly outlined below.

1. Lifetime Estimates

The Department overestimates the lifetime of commercial refrigeration products. This skews the assumptions in the costs and benefits analysis. The Department should reach out to end-users and manufacturers to get a more accurate lifetime estimate for commercial refrigeration products.

2. Equipment Classes

The limits imposed by the Department with the rulemakings current equipment categories do not fully encompass the variety of products and customizations currently in the marketplace. There are several subtle distinctions among products that result in different energy savings potential. These categories should be reevaluated to incorporate these subtleties.

3. Secondary Market

Assuming a zero price elasticity of demand is a faulty assumption because there is a healthy market for second-hand commercial refrigerators. NAFEM members experience with users

concludes that any price increase that has a payback period longer than 2 years will likely steer users to this marketplace.[13]

4. Non-Regulatory Initiatives

There are several alternatives to regulation that would achieve the energy savings objective of this regulation. Moving forward Department should reconsider non-regulatory alternatives and explain in detail why the regulation is necessary in light of these effective programs.

A. Energy Star Impacts

The Department failed to consider the impacts of Energy Star on the marketplace. Most notably, the Department used an old Energy Star standard which resulted in an assumption that Energy Star had no impact on energy savings. The Department should undertake this analysis again incorporating the updated Energy Star standards that are stricter and will result in significant energy savings.

The Department also failed to assume the reality that the ubiquity of requirements that entities purchase Energy Star equipment results in the program's standards being a de facto regulatory limit. Several programs below elaborate on this point.

B. Federal Energy Management Program

The Federal Energy Management Program is a program that in conjunction with Energy Star results in a significant improvement in efficiency. This program requires that federal buildings implement energy efficient appliances. The federal government is a large client for many NAFEM members. Therefore, this market-based program encouraged manufacturers to innovate and create energy savings to ensure that the company did not lose a large client. The effectiveness of this program should have been more thoroughly considered as an alternative to issuing this regulation.

C. Local and State Regulatory Initiatives

In addition to federal programs that require Energy Star, products are purchased for government buildings, many states and local entities have implemented these requirements. These entities are a large market that NAFEM members choose to offer high efficiency products to in order to retain their business. These initiatives further the effectiveness of Energy Star and add to the

[13] NAFEM Member Call, 10/25.

necessity that NAFEM members produce commercial refrigeration equipment that meets these standards. This regulatory reality was not evaluated in the Department's analysis.

D. LEED Programs

The Department failed to acknowledge the impact of voluntary building standards that are increasingly present in the market place and require high efficiency products endorsed by the Energy Star program.

E. International Markets

The Department's analysis is flawed because it fails to consider the impending requirement in the Montreal Protocol that NAFEM members switch the type of refrigerant in their products. This adds to the overall engineering costs, current efficiency savings and regulatory burden on manufacturers.

5. Impacts on Small Businesses

Small businesses do not have the resources to dedicate to the research and development necessary to create and implement the design options that will be necessary to comply with the standards in the current NOPR.

III. Cumulative Regulatory Burden

The Department states that it cannot consider regulations that are not yet finalized. To the contrary, the DOE must consider these regulations. It is feasible and important that the Department evaluate the cumulative impact on the industry of all of the regulations it is promulgating. Currently the Department has three regulations in the process of finalization that will affect the commercial refrigeration industry within a very short compliance time. These other standards, while not finalized, are known, both in terms of their timeframe and in terms of the proposed levels developed by the Department of Energy.

1. EPA Energy Star Program

The Department failed to consider the overlapping conflicting requirements of the Energy Star program administered by the EPA. These competing processes are resulting in conflicting efficiency standards and considerable time and resources being dedicated by businesses to participate in both programs. These programs should be coordinated to reduce the regulatory burden on the industry.

2. Local & State Regulations

Local and state entities are increasingly creating regulations that address energy efficiency measures in commercial refrigeration. The Department should request information from manufacturers on the impact of these regulations on their businesses. These regulations should be considered and addressed when issuing rules and compliance deadlines.

3. International Regulations

Manufacturer comments go into detail on the complications of interacting with international regulations that address elements of commercial refrigeration untouched by the United States. The burden of complying with these regulations should be considered when issuing rules and creating compliance timelines.

IV. Failure to Comply with Executive Branch Directives

Creating an undue regulatory burden on manufacturers is a violation of Executive Orders 12866 and 13563 which direct agencies to limit regulations to necessary situations and ensure that the negative effects on stakeholders are limited. The Department analysis was flawed because it failed to adequately consider the impact on small businesses, non-regulatory alternatives, and duplicative regulation. The rulemaking also failed to utilize the most cost-effective solution to achieve the objective of improved efficiency in commercial refrigeration.

1. Small Business Impact

In addition to creating an undue regulatory burden with excessive and overlapping regulation on a single industry, the proposed rule has a disproportion negative impact on small businesses. Small manufacturers do not have the capital to invest in the engineering and testing costs that would be necessary to create and implement design options that meet the TSL-4 standard's stringent efficiency requirements.

2. Failure to Consider Non-Regulatory Alternatives

The Department dismissed non-regulatory alternatives without the detailed consideration required by Executive Orders 12866 and 13563. Programs that should have been considered as an alternative to this regulation include: Energy Star, government procurement initiatives, initiatives to encourage high-efficiency product development, early replacement programs, and voluntary energy efficiency targets. The Department of Energy miscalculated the existing policies and therefore arrived at a faulty conclusion based on the exclusion of new Energy Star standards that were recently introduced.

The Department should revisit the dismissal of electronic controls and devices as technologies that improve efficiency in commercial refrigeration products. Evaluating the energy savings at only rated load conditions ignores the potentially substantial savings that are possible in actual operation of a year-long cycle.

3. Failure to Select the Most Cost-effective Solution to Achieve Objective

The Department failed to select the most cost-effective solution to achieve the energy savings objective of the regulation. The flawed market analysis, cost estimates and failure to acknowledge non-regulatory market-based alternatives resulted in this failure. The Department should revisit the standard and recognize that a TSL-4 standard is not cost-effective. A market-based approach is the most cost-effective option. However, if the Department refuses to select that obvious option, the standard selected in the final rule should be able to meet the economic justification and technological feasibility thresholds.

4. Impact on End-User

In the public meeting the Department said it had made no contact with end-users to understand the impact on users. This should be remedied before moving forward with a final rule to minimize the movement of users away from energy efficient, but costly, appliances towards less efficient and less costly used equipment.

A detailed analysis of the Executive Order sections violated is below.

Executive Order 12866, Regulatory Planning and Review

Section 1(b) (2) states that "*Each agency shall examine whether existing regulations (or other law) have created, or contributed to, the problem that a new regulation is intended to correct and whether those regulations (or other law) should be modified to achieve the intended goal of regulation more effectively."*

The Department failed to consider existing regulations and government programs that are in existence to achieve the intended goal of the rulemaking. No evaluation of the effectiveness of the similar 2009 rulemaking to improve commercial refrigeration efficiency was done to give a basis for why a more stringent standard should be implemented. The agency also failed to consider government programs such as Energy Star that are actively and successfully improving energy efficiency in commercial refrigeration products.

Section 1(b)(3) states that "*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.*"

The analysis attached to the NOPR failed to identify and assess available alternatives to this direct regulation. First, the agency used the wrong standard for the Energy Star program in the evaluation, leading to a gross error in impacts. Second, there was no legitimate discussion of using any available alternative such as user fees, marketable permits, or providing information to the public. In fact, Energy Star, a program that provides information to the public, has been very successful and is constantly updating their standards to a more stringent requirement.

The Department should evaluate the alternatives to this regulation in detail before moving forward in the rulemaking process. There are clearly recent examples of market-based alternatives that are successful in creating more energy efficient products and capturing a larger market-share with these environmentally friendly alternatives.

Section 1(b)(5) states that "*When an agency determines that a regulation is the best available method of achieving the regulatory objective, it shall design its regulations in the most cost-effective manner to achieve the regulatory objective. In doing so, each agency shall consider incentives for innovation, consistency, and predictability, the costs of enforcement and compliance (to the government, regulated entities, and the public), flexibility, distributive impacts, and equity.*"

The Department y failed to design this regulation in the most cost-effective manner to achieve the regulatory objective. This was in large part due to the reliance on faulty data and inaccurate assumptions.

The Department also miscalculated the impact of the costs to the public and regulated entities. Additionally, the NOPR does not provide the flexibility necessary for small manufacturers to comply with this regulation that unfairly negatively affects small manufacturers.

Section 1(b)(7) states that "*Each agency shall base its decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation.*"

The Department did not base its decisions on the best reasonably obtainable technical or economic information available. The Department failed to provide any specific information

about a compressor that is not currently available on the market, but is necessary to comply with the regulation. None of NAFEM's manufacturer members are able to find a source that has a compressor meeting the requirements available, or is in the process of creating such a part that will be available by the required date of compliance.

If the agency has this information, which the rulemaking so heavily relies on, it should share those resources with the manufacturers to both reduce costs and ensure timely compliance.

Section 1(b)(10) states that "*Each agency shall avoid regulations that are inconsistent, incompatible, or duplicative with its other regulations or those of other Federal agencies."*

This regulation is incompatible with the deluge of regulations that require manufacturers of foodservice equipment to engineer and implement a plethora of new measures to meet the regulatory requirements by similar compliance dates.

Section 1(b)(11) states that "*Each agency shall tailor its regulations to impose the least burden on society, including individuals, businesses of differing sizes, and other entities (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 Department failed to create this regulation and impose the least possible burden on society to achieve the regulatory objective. In fact, the regulatory compliance deadline and engineering requirements to create a new part to meet the deadline created an undue and overly burdensome impact on small businesses that do not have the resources to meet this stringent standard in the timeline allotted. Additionally, the agency failed to consider regulations that affect the same manufacturers and will also require large amounts of capital to meet the regulatory requirements in the same brief time periods. This could have the detrimental effect of removing smaller manufacturers from the market.

Section 2 (a) states that "*The Agencies. Because Federal agencies are the repositories of significant substantive expertise and experience, they are responsible for developing regulations and assuring that the regulations are consistent with applicable law, the President's priorities, and the principles set forth in this Executive order."*

For all the reasons outlined above the Department has failed to follow the principles set forth in Executive Order 12866.

Section 2(b) states that "*The Office of Management and Budget. Coordinated review of agency rulemaking is necessary to ensure that regulations are consistent with applicable law, the President's priorities and the principles set forth in this Executive Order, and that the decisions made by one agency do not conflict with the policies or actions taken or planned by another agency. The Office of Management and Budget (OMB) shall carry out that review function. Within OMB, the Office of Information and Regulatory Affairs (OIRA) is the repository of expertise concerning regulatory issues, including methodologies and procedures that affect more than one agency, this Executive order, and the President's regulatory policies. To the extent permitted by law, OMB shall provide guidance to agencies and assist the President, the Vice President, and other regulatory policy advisors to the President in regulatory planning and shall be the entity that reviews individual regulations, as provided by this Executive order.*"

Should this rulemaking process move forward as currently drafted, an option that NAFEM strenuously opposes, the Office of Management and Budget must conclude that the Department of Energy failed to coordinate a review of agency rulemakings outside the Department of Energy. Specifically, the DoE must consider the impact the new standards will have on the Energy Star program overseen by the Environmental Protection Agency.

Executive Order 13563, Improving Regulation and Regulatory Review

Section 1(c) states that "*In applying these principles, each agency is directed to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. Where appropriate and permitted by law, each agency may consider (and discuss qualitatively) values that are difficult or impossible to quantify, including, equity, human dignity, fairness, and distributive impacts.*"

The Department did not fully consider the values listed in the above section. The impacts of complying with this regulation as proposed are not equitable or fair to small businesses in the commercial refrigeration industry.

Additionally, using science that ignores the current landscape of the marketplace does not meet the requirement of using the best available techniques to quantify anticipated and present costs as accurately as possible. The inaccuracies resulting from missing or faulty data contribute to overly burdensome mandates on the commercial refrigeration manufacturing industry.

Section 2(c) states that "*Before issuing a notice of proposed rulemaking, each agency, where feasible and appropriate, shall seek the views of those who are likely to be affected, including those who are likely to benefit from and those who are potentially subject to such rulemaking."*

In the case of this rulemaking, it was feasible and appropriate for the Department to reach out to end-users, users and manufacturers. At the public meeting on October 3, 2013, DoE representatives stated that there were no efforts to get feedback from users of the products. This was wrong and violates the letter and spirit of Executive Order 13563. This should be remedied before any further action is taken by the agency. NAFEM believes that even brief conversations with the parties that purchase these products would make clear that several components of the model were faulty and should not be considered because users will not purchase products with the features presented in the NOPR.

Section 3 states that "*Some sectors and industries face a significant number of regulatory requirements, some of which may be redundant, inconsistent or overlapping. Greater coordination across agencies could reduce these requirements, thus reducing costs and simplifying and harmonizing rules. In developing regulatory actions and identifying appropriate approaches, each agency shall attempt to promote such coordination, simplification and harmonization. Each agency shall also seek to identify, as appropriate, means to achieve regulatory goals that are designed to promote innovation."*

The commercial refrigeration sector is facing a significant number of regulatory requirements with fast-approaching compliance deadlines. The testing methods to ensure compliance to these regulations are being negotiated and modified by the Department. All of these actions, taken by the DOE, in addition to local, state and international regulations create a web of inconsistent overlapping regulatory requirements imposed on the commercial refrigeration industry.

Section 5 states that "*Consistent with the President's Memorandum for the Heads of Executive Departments and Agencies, "Scientific Integrity" (March 9, 2009), and its implementing guidance, each agency shall ensure the objectivity of any scientific and technological information and processes used to support the agency's regulatory actions."*

The Department failed to meet the scientific integrity standard required and encouraged by the Obama Administration to ensure all rulemakings result in the most effective rule that is not unduly burdensome on any particular group of stakeholders. Several assumptions that the Department made in the calculations were wrong and resulted in a model that produced a

standard that is unable to be reached in the time period provided in the NOPR. The agency should remedy this by using science that takes into account all factors and does not make any unfounded assumptions and do so before any further action is taken on this rulemaking.

Scientific Integrity

In 2009, the President issued a Memorandum stating six principles to ensure the highest level of scientific integrity existed throughout agency actions. In 2010, the Office of Science and Technology Policy issued a memorandum directed to the heads of agencies that provided detailed guidance on the President's Memorandum. On March 23, 2012, Secretary Chu issued the Secretarial Policy Statement on Scientific Integrity outlining the implementation of the six principles to ensure scientific integrity in all agency actions. This rulemaking failed to follow the principles and guidance of the aforementioned documents.

In Section 1(c) of the Secretarial Policy Statement on Scientific Integrity the Secretary directs the Department to have data and research undergo an "independent peer review by qualified experts[.]"[14] The analysis fails to provide a source that proves the research has undergone a thorough review, as required to ensure scientific integrity.

In Section 1(h) of the Secretarial Policy Statement on Scientific Integrity the Secretary directs the Department to communicate the findings "by a clear explication of underlying assumptions." The DOE's underlying assumptions were not clear in this rulemaking and imposed an undue burden on stakeholders to gather that information from Department employees.

Section 1(h) also requires "accurate contextualization of uncertainties; and a description of the probabilities associated with both optimistic and pessimistic projections, including best-case and worst-case scenarios where appropriate." The DOE failed to accurately contextualize uncertainties pertaining to non-regulatory alternatives and in the market assessment of the second-place marketplace. The DOE failed to include an adequate description of the probabilities associated with projections of costs to manufacturers for compliance and costs to users including more pessimistic compliance costs.

Conclusion

NAFEM supports energy efficiency standards that are technologically feasible, based on sound peer-reviewed science, and seamlessly interact with non-regulatory, market-based efficiency initiatives. NAFEM urges the DOE to reconsider the currently proposed TSL-4 standard. The

[14] Secretarial Policy Statement on Scientific Integrity. March 23, 2012.

TSL-4 standard should be replaced with a standard that encourages efficiency without creating the unintended consequences that undermine the efficiency savings, impede product functionality, and create an undue burden on manufacturers. Any proposed standard should be more thoroughly informed by the dynamic nature of configuring inputs for equipment manufacture and by the marketplace realities of the demands and limitations of end-users. To properly determine what such a standard would be the Department should use design options that are technologically feasible and economically justified in the technological assessment. The Department should also update the market assessment with accurate lifetime estimates, a full evaluation of market-based initiatives, and improved equipment category distinctions. Finally, the Department should conform the rulemaking to the applicable Executive Orders and directives on scientific integrity.

Again, thank you for the opportunity to comment on this proposed rule. NAFEM looks forward to working with DOE to improve the efficiency standards in this rule-making.

Respectfully Submitted,

North American Association of Food Equipment Manufacturers

By: Charlie Souhrada
Director of Membership
North American Association of Food Equipment Manufacturers
161 N. Clark Street, Suite 200
Chicago, IL 60601
Phone: (312) 821-0212
Fax: (312) 821-0202
csouhrada@NAFEM.org