

the value of wait time (\$10.04) to arrive at the value of the additional driving time travelers arriving in the United States once Whitetail is closed. Finally, we double this to account for round trip costs to reach a total time cost of \$51,626.

Besides the cost of additional travel time, we must consider the vehicle costs of a longer trip. We must first estimate the number of miles the closure of Whitetail would add to travelers' trips. The annual traffic arriving at Whitetail is 1,300 vehicles. Since we assume that the closure will add 40 miles to each crossing, the closure will add a total of 52,000 miles to travelers' trips each year. We next monetize the delay by applying the IRS's standard mileage rate for business travel of \$0.50 to these vehicles, which includes fuel costs, wear-and-tear, and depreciation of the vehicle. Because this is an estimate for business travel, it may overstate slightly costs for leisure travelers using their vehicles on leisure activities. Finally, we double the costs to account for the return trip. We estimate that a closure of Whitetail will cost U.S. citizens \$52,000 in additional vehicular costs.

The final cost we must consider is the cost to the economy of lost revenue resulting from potential decreased Canadian travel. Because of the lack of data on the nature of travel through Whitetail and its effect on the local economy, we are unable to monetize or quantify these costs. We therefore discuss this qualitatively.

Since both U.S. and foreign travelers will be inconvenienced by the closure of the port of Whitetail, it is possible that fewer foreign travelers will choose to cross the border into the United States. To the extent that these visitors were spending money in the United States, local businesses would lose revenue. Since fewer than four vehicles a day enter the United States at Whitetail, this effect is likely to be very small. Also, these revenue losses could be mitigated by those U.S. citizens who would now choose to remain in the United States. We believe that the total impacts on the economy due to decreased travel to the United States are negligible.

In summary, the closure of the port of Whitetail would cost CBP \$158,000 in direct closure costs in the first year, and U.S. travelers \$51,626 in time costs and \$52,000 in vehicle costs annually. Total costs to close the port are thus approximately \$262,000 in the first year and \$104,000 each following year.

### 3. Net Effect of Closure

The costs to CBP of leaving the port of Whitetail open are \$8.5 million the first year and \$500,000 each following

year. The cost of closing the port are \$262,000 the first year and \$104,000 each following year. Thus, the net benefit of the Whitetail closure is about \$8.2 million the first year and \$396,000 each year after that.

### C. Regulatory Flexibility Act

This section examines the impact of the rule on small entities as required by the Regulatory Flexibility Act (5 U.S.C. 603), as amended by the Small Business Regulatory Enforcement and Fairness Act of 1996. A small entity may be a small business (defined as any independently owned and operated business not dominant in its field that qualifies as a small business per the Small Business Act); a small not-for-profit organization; or a small governmental jurisdiction (locality with fewer than 50,000 people).

Because CBP does not collect data on the number of small businesses that use the port of Whitetail, we cannot estimate how many would be affected by this rule. However, an average of only four vehicles cross into the United States at Whitetail each day, and the total cost of the rule to the public is only about \$104,000 a year, even assuming the longest possible detour for all traffic. DHS does not believe that this cost rises to the level of a significant economic impact. DHS thus believes that this rule will not have a significant economic impact on a substantial number of small entities. DHS welcomes any comments regarding this assessment. If it does not receive any comments contradicting this finding, DHS will certify that this rule will not have a significant economic impact on a substantial number of small entities at the final rule stage.

### D. Unfunded Mandates Reform Act of 1995

This rule will not result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more in any one year, and it will not significantly or uniquely affect small governments. Therefore, no actions are necessary under the provisions of the Unfunded Mandates Reform Act of 1995.

### E. Executive Order 13132

The rule will not have substantial direct effects on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with section 6 of Executive Order 13132, this rule does not have sufficient federalism implications to

warrant the preparation of a federalism summary impact statement.

### V. Authority

This change is proposed under the authority of 5 U.S.C. 301, 6 U.S.C. 112, 203 and 211, 8 U.S.C. 1103 and 19 U.S.C. 2, 66 and 1624.

### VI. Proposed Amendment to Regulations

If the proposed closure of the port of Whitetail, Montana, is adopted, CBP will amend the lists of CBP ports of entry at 19 CFR 101.3(b)(1) and 8 CFR 100.4(a) to reflect this change.

Janet Napolitano,  
Secretary.

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## DEPARTMENT OF ENERGY

### 10 CFR Part 430

[Docket No. EERE-2007-BT-STD-0016]

RIN 1904-AB50

### Energy Conservation Program: Energy Conservation Standards for Fluorescent Lamp Ballasts

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.

**ACTION:** Notice of data availability and request for public comment.

**SUMMARY:** On April 11, 2011, the U.S. Department of Energy (DOE) published a notice of proposed rulemaking (NPR) proposing new and amended standards for fluorescent lamp ballasts (ballasts) pursuant to the Energy Policy and Conservation Act of 1975 (EPCA). During the subsequent public meeting and in written comments, stakeholders provided additional data and raised concerns regarding the test data DOE used in support of the NPR and DOE's approach to accounting for measurement variation and compliance certification requirements. In response to several of those comments, DOE conducted additional testing and is publishing this notice to: announce the availability of additional data provided by the National Electrical Manufacturers Association (NEMA) and additional DOE test data; address the differences between the DOE test data and the data submitted by NEMA; describe the methodological changes DOE is considering based on the additional data and present efficiency levels developed using the revised methodology and all available test data; and request public comment on the updated analyses, as

well as the submission of data and other relevant information.

**DATES:** DOE will accept comments, data, and information regarding this notice of data availability submitted no later than September 14, 2011. See section VI, "Public Participation," of this notice for details.

**ADDRESSES:** Any comments submitted must identify the notice of data availability (NODA) for fluorescent lamp ballasts and provide the docket number EERE-2007-BT-STD-0016 and/or Regulatory Information Number (RIN) 1904-AB50. Comments may be submitted using any of the following methods:

1. *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the instructions for submitting comments.

2. *E-mail:* [ballasts.rulemaking@ee.doe.gov](mailto:ballasts.rulemaking@ee.doe.gov). Include the Docket Number EERE-2007-BT-STD-0016 and/or RIN number 1904-AB50 in the subject line of the message.

3. *Postal Mail:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. If possible, please submit all items on a compact disc (CD), in which case it is not necessary to include printed copies.

4. *Hand Delivery/Courier:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, 950 L'Enfant Plaza, SW., Suite 600, Washington, DC 20024. Telephone: (202) 586-2945. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No telefacsimilies (faxes) will be accepted. For detailed instructions on submitting comments and additional information on the rulemaking process, see section VI of this document (Public Participation).

**Docket:** The docket is available for review at <http://www.regulations.gov>, including **Federal Register** notices, comments, and other supporting documents/materials. All documents in the docket are listed in the <http://www.regulations.gov> index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

A link to the docket Web page can be found at: <http://www.regulations.gov>. The <http://www.regulations.gov> Web page contains a link to the docket for this notice, along with simple instructions on how to access all documents, including public comments, in the docket. See section VI.A for

further information on how to submit comments through <http://www.regulations.gov>.

For further information on how to submit a comment or review other public comments and the docket, contact Ms. Brenda Edwards at (202) 586-2945 or by e-mail: [Brenda.Edwards@ee.doe.gov](mailto:Brenda.Edwards@ee.doe.gov).

**FOR FURTHER INFORMATION CONTACT:** Dr. Tina Kaarsberg, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 287-1393. E-mail: [Tina.Kaarsberg@ee.doe.gov](mailto:Tina.Kaarsberg@ee.doe.gov).

Ms. Elizabeth Kohl, U.S. Department of Energy, Office of the General Counsel, GC-71, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-7796. E-mail: [Elizabeth.Kohl@hq.doe.gov](mailto:Elizabeth.Kohl@hq.doe.gov).

For information on how to submit or review public comments, contact Ms. Brenda Edwards, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-2945. E-mail: [Brenda.Edwards@ee.doe.gov](mailto:Brenda.Edwards@ee.doe.gov).

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#### I. Introduction

The EPCA establishes energy conservation standards for certain ballasts and requires that DOE conduct two cycles of rulemaking to determine whether to amend the standards for ballasts, including whether to adopt

standards for additional ballasts. (42 U.S.C. 6295(g)(5)–(8)) To complete the first of these rulemakings, DOE published the 2000 Ballast Rule. 65 FR 56740 (Sept. 19, 2000). To complete the second rulemaking, DOE is considering amendments to the existing standards for ballasts and evaluating standards for additional ballasts.

In April 2011, DOE published a notice of proposed rulemaking (NPR) that proposed new and amended energy conservation standards for fluorescent lamp ballasts (hereafter the April 2011 NPR). 76 FR 20090. In conjunction with the NPR, DOE also published on its Web site the complete technical support document (TSD) for the proposed rule, which described the analyses DOE conducted and included technical documentation for each analysis. The TSD also included the engineering analysis spreadsheets, the life cycle cost (LCC) spreadsheet, the national impact analysis spreadsheet, and the manufacturer impact analysis (MIA) spreadsheet.<sup>1</sup>

DOE held a public meeting on May 10, 2011, to hear oral comments on and solicit information relevant to the proposed rule (hereafter the May 2011 public meeting). At this meeting, NEMA presented test data that they found inconsistent with the data collected by DOE and that could affect the standards established in the final rule. In general, NEMA's ballast luminous efficiency (BLE) values appeared to be lower than those obtained by DOE. These observations caused NEMA to question the validity of the data collected by DOE for the April 2011 NPR. NEMA specifically cited lab accreditation, sample size, and calculations of BLE as potential sources of the discrepancies they observed. Other stakeholders agreed that there were discrepancies between the two data sets and emphasized the importance of identifying the source of the differences. In addition, DOE received comments on the methodology used to account for compliance certification requirements, design variation, and measurement variation. DOE also received comments on the appropriate shape of DOE's proposed efficiency level curves.<sup>2</sup>

Since the publication of the NPR, DOE has analyzed NEMA's data and conducted additional testing to enhance

<sup>1</sup> The spreadsheets developed for this rulemaking proceeding are available at: [http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/fluorescent\\_lamp\\_ballasts.html](http://www1.eere.energy.gov/buildings/appliance_standards/residential/fluorescent_lamp_ballasts.html).

<sup>2</sup> Comments referenced here are available in the docket for this rulemaking, which can be found at [regulations.gov](http://www.regulations.gov) under docket number EERE-2007-BT-STD-0016.

its analysis. In order to incorporate these additional results, DOE has modified slightly its approach to the engineering analysis and thus is considering efficiency levels that differ from those presented in the April 2011 NOPR.

DOE is publishing today's NODA to: (1) Announce the availability of the additional NEMA test data and the additional test data developed by DOE; (2) address the differences between test data obtained by DOE and test data submitted by NEMA; (3) describe the methodological changes DOE is considering based on the additional data and present efficiency levels developed using the revised methodology and all available test data; and (4) request public comment on these analyses, as well as the submission of other relevant information. The following sections describe the additional data and revised methodology in more detail. After considering the comments received, DOE will publish a final rule by October 28, 2011.<sup>3</sup>

## II. Additional Data

For the April 2011 NOPR, DOE tested more than 450 ballasts to develop proposed energy conservation standards. At the time the NOPR was published, DOE posted test data to its public Web site in Appendix 5C of the TSD. Appendix 5C contained a listing of all ballast models tested at DOE's primary lab for the April 2011 NOPR, including identifying characteristics such as lamp type operated, number of lamps operated, starting method, ballast factor, input voltage, and catalog performance value. For each ballast model, DOE also reported average<sup>4</sup> tested values for input power, total lamp arc power, and BLE.<sup>5</sup>

At the May 2011 public meeting, NEMA presented data collected from several manufacturers. These test results were contained in a power point presentation that was subsequently posted to the public meeting Web site ([http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/fluorescent\\_ballasts\\_nopr\\_public](http://www1.eere.energy.gov/buildings/appliance_standards/residential/fluorescent_ballasts_nopr_public_meeting.html)

[meeting.html](http://www1.eere.energy.gov/buildings/appliance_standards/residential/fluorescent_ballasts_nopr_public_meeting.html)). NEMA's data included average BLE values from three manufacturers that were reduced by 0.8 percent to account for compliance certification requirements. Attendees of the public meeting noted that the BLE values of the most efficient ballast models tested by NEMA appeared to be less than the most efficient ballast models tested by DOE. These stakeholders emphasized the importance of identifying the reasons for the differences between the two data sets. In addition, several stakeholders requested that DOE provide more information, including data for individual ballast samples and test results from other labs at which testing was conducted. NEMA also noted that about 60 percent of DOE's test data represented ballast models with less than four tested samples, which is not consistent with the minimum number of samples required to demonstrate compliance with DOE's standards. The California Utilities (CA Utilities) stated that if possible, DOE should conduct testing of four or more samples to more accurately reflect the testing process that must be completed by manufacturers for certification purposes.

Following the May 2011 public meeting, DOE posted to the public meeting Web site a more comprehensive set of test data used to develop the April 2011 NOPR, which specified ballasts by serial numbers, added round robin test results, and included results for each sample tested, rather than the average across several samples for each model number. DOE also purchased and tested additional ballasts to increase tested models' sample size to a minimum of four samples consistent with compliance certification requirements in 10 CFR 429.26. DOE also tested additional ballast models, particularly for sign ballasts and residential ballasts, to gain more market information about these ballasts. This NODA announces the availability of all available test data—the NEMA-provided data, the data utilized for the April 2011 NOPR, and the results of additional testing conducted after publication of the April 2011 NOPR—on DOE's Web site: [http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/fluorescent\\_ballasts.html](http://www1.eere.energy.gov/buildings/appliance_standards/residential/fluorescent_ballasts.html).

## III. Comparison of NEMA-Provided Data and DOE Data

At the May 2011 public meeting, NEMA presented test results for its highest efficiency NEMA Premium products. NEMA explained that the data contained in the presentation

represented the mean of four or five samples that was then decreased by 0.8 percent to account for compliance requirements. NEMA stated that this reduction, consistent with DOE's proposed reduction to efficiency levels in the April 2011 NOPR, was calculated using the same methods that are required to certify with new standards.

In addition to their observation that the manufacturer-provided data was lower in efficiency than DOE's data, NEMA expressed concern regarding DOE's data collection methods. NEMA commented that the number of samples DOE tested for several ballast models was too small, potentially resulting in test data not representative of the mean efficiencies of the ballast model's population. They pointed out that for the majority of ballast models included in the analysis, DOE tested fewer than four samples, which is not consistent with the minimum number of samples required to demonstrate compliance with DOE's standards. NEMA also commented that the difference between the data it collected and DOE's results may be due to DOE's labs not having proper accreditation. Furthermore, NEMA stated that the measured BLEs reported in appendix 5C of the NOPR TSD were not consistent with the BLEs calculated by NEMA (using data from the same appendix).

Following the May 2011 public meeting, several manufacturers provided the model numbers and corresponding efficiencies for the ballasts included in NEMA's data set. Upon receiving this information, DOE conducted a comparative analysis and evaluated potential sources for the apparent discrepancies between the DOE and NEMA data sets: The reduction factor NEMA applied to its average BLE values, sample size, lab accreditation, the calculation of BLE, and the arc powers reported for NEMA's results.

After considering all of the potential sources, discussed in the following sections, DOE preliminarily concludes that, after removing NEMA's reduction factor as discussed in section III.A., the remaining differences between the two data sets arise primarily from normal measurement variation. This remaining variation generally falls within the expected measurement variation of  $\pm 2.5$  percent of the mean efficiency, suggested by NEMA. Additional testing has increased sample size such that it is consistent with compliance certification requirements. DOE has also confirmed that its testing was conducted in accordance with the active mode test procedure and that its calculations of BLE are accurate.

<sup>3</sup> Under the consolidated Consent Decree in *New York v. Bodman*, No. 05 Civ. 7807 (S.D.N.Y. filed Sept. 7, 2005) and *Natural Resources Defense Council v. Bodman*, No. 05 Civ. 7808 (S.D.N.Y. filed Sept. 7, 2005), the U.S. Department of Energy was required to publish a final rule amending energy conservation standards for fluorescent lamp ballasts no later than June 30, 2011. The consent decree was later modified, requiring DOE to publish a final rule no later than October 28, 2011.

<sup>4</sup> The average across several samples for each model number.

<sup>5</sup> DOE obtained these values in accordance with the active mode test procedure in Appendix Q1 of 10 CFR part 430.

### A. NEMA Reduction Factor

As stated earlier, the ballast efficiencies presented by NEMA at the May 2011 public meeting represent the mean of four or five samples decreased by 0.8 percent. To calculate this 0.8 reduction factor, NEMA referred DOE to an analysis NEMA conducted and submitted as a comment. In that analysis, NEMA calculated the 0.8 percent reduction factor based on an application of the certification equation described in 10 CFR 429.26. NEMA assumed that each sample set's three standard deviation spread was equal to five percent of the mean efficiency (2.5 percent for design variation and 2.5 percent for measurement variation). NEMA then calculated a mean efficiency adjustment factor (for sample sizes of four and five) by inserting this standard deviation into the certification equation. This adjustment factor represented an estimate of the percent difference between the sample mean and the value NEMA anticipated reporting to DOE for certification.

To understand potential discrepancies between NEMA and DOE's test data, it is necessary to ensure that similar calculation methodologies have been undertaken for the two data sets. Therefore, for the purpose of comparing the efficiency data, DOE removes the 0.8 percent reduction from NEMA's presented ballast efficiencies, resulting in values that represent mean tested efficiencies. These efficiency values are analogous to DOE's mean tested efficiencies presented in the NOPR. However, DOE recognizes the importance of accounting for measurement variation and certification requirements in establishing efficiency levels. Additional discussion of these issues and how DOE is considering addressing them is provided in section IV.

### B. Sample Size

NEMA noted that less than 40 percent of DOE's test data for the April 2011 NOPR represented ballast models with four or more tested samples. They stated that the large standard deviation in efficiency among DOE's samples, as well as the discrepancy in tested values versus catalog reported values, indicates that DOE potentially did not use a sufficient number of samples to calculate the mean efficiencies of the ballast models analyzed. The California Utilities (CA Utilities) stated that if possible, DOE should conduct testing of four or more samples per ballast model to more accurately reflect the testing process that must be completed by

manufacturers for certification purposes.

Since the publication of the April 2011 NOPR, DOE has conducted additional testing to increase the sample size of selected ballast models. Over 90 percent of tested ballast models now have a minimum of four samples. Only in those cases where models have been discontinued or were unavailable for purchase was DOE unable to test a minimum of four samples.

### C. Lab Accreditation

NEMA also commented that the difference between the data it collected and DOE's results may be due to DOE's labs not having proper accreditation. DOE notes that 10 CFR 430.25 requires testing of fluorescent lamp ballasts to be performed in accordance with Appendix Q1 of 10 CFR part 430 subpart B by test laboratories accredited by National Volunteer Laboratory Accreditation Program (NVLAP) or a NVLAP-recognized organization, Underwriter Laboratories, or Council of Canada in accordance with ISO 17025. 76 FR 25211, 25219 (May 4, 2011). ISO 17025 is an international standard that outlines general requirements for the competence of testing and calibration laboratories. NVLAP operates an accreditation system that requires applicant laboratories to be assessed against all ISO 17025 requirements.

DOE has contacted both test laboratories utilized for DOE testing and verified each is properly accredited and that all testing was conducted in accordance with the active mode test procedure in Appendix Q1. However, DOE recognizes that lab-to-lab variation can still be present among NVLAP-accredited test labs following the prescribed test procedure. DOE accounts for lab-to-lab variation in the establishment of efficiency levels as described in section IV.B.

### D. Measured Versus Calculated BLE

NEMA identified several samples in DOE's test data for which the measured BLE reported in appendix 5C of the NOPR TSD was not consistent with the BLE calculated by NEMA. Though some of the differences were small, NEMA provided examples of four ballast models with differences up to 8 percent.

To address the small discrepancies, DOE notes that the information provided by NEMA is consistent with calculating the BLE values by dividing the average arc power of all samples by the average input power of all samples. NEMA's method is not consistent with the active mode test procedure. In contrast, DOE's measured BLE reported in appendix 5C of the TSD was

determined, as required in the test procedure, by averaging the BLE of each individual sample. Based on DOE's analysis, this difference in methodology accounts for the small discrepancies observed between the values reported in appendix 5C and those calculated by NEMA.

DOE also worked to resolve the larger differences cited by NEMA in their presentation at the May 2011 meeting. DOE identified six samples with measured-versus-calculated BLE differences ranging from 7.8 to 8.0 percentage points, which included the specific examples cited by NEMA. These six samples were all magnetic ballasts; in accordance with active mode test procedure (see Table A, Appendix Q1 of 10 CFR part 430 subpart B), DOE calculated BLE by reducing the measured ballast efficiency (lamp arc power divided by ballast input power) by a frequency adjustment factor (1.00 for high-frequency ballasts and values ranging from 0.93 to 0.95 for low-frequency ballasts). These larger discrepancies are consistent with NEMA not including this adjustment factor in its calculation of BLE. Thus, DOE believes its measured BLE values are correctly calculated and consistent with the active mode test procedure.

### E. Total Lamp Arc Power Approximations

Due to the relationship between total lamp arc power and ballast efficiency, in the NOPR, DOE proposed establishing efficiency levels as logarithmic equations dependent on measured total lamp arc power. When NEMA plotted their test data against the DOE proposed efficiency levels, however, NEMA paired their ballast efficiency test data with approximated total lamp arc powers rather than measured arc powers. DOE found these approximations to be higher than typical test results for similar ballast types in DOE's data set, with differences as high as 27.6 percent overall. As this discrepancy could potentially cause NEMA's test data to appear to have artificially lower efficiencies relative to DOE's efficiency levels, DOE has revised NEMA's approximate lamp arc powers using American National Standards Institute (ANSI) rated high frequency lamp arc powers to calculate total expected lamp arc power. These lamp arc powers better align with expected total lamp arc powers for similar ballast types.

For example, NEMA associated the efficiency of a ballast with a normal ballast factor that operates two 4-foot medium bipin (MBP) T8 lamps with an arc power of 55 W. To correct the

approximated arc power, DOE calculated the typical arc power (51 W) by multiplying the ANSI-specified high frequency arc wattage for an F32T8 lamp (29 W) by the number of lamps operated (2) and the most common normal ballast factor (0.88). DOE used this calculated arc power when comparing its efficiency levels to the manufacturer-provided data as discussed in section V.

#### IV. Accounting for Variation and Compliance Certification Procedures

In the April 2011 NOPR, DOE accounted for measurement variation and certification requirements by calculating reduction factors for each and adjusting the efficiency levels accordingly. DOE calculated a 0.6 percent reduction factor for measurement variation by comparing the data from the primary laboratory, which conducted the majority of DOE's testing, with data from its secondary laboratory, which tested a limited number of identical samples. DOE applied the 0.6 percent measurement variation reduction to the efficiency curves so that the standard level could, on average, be met by ballasts tested at the less efficient lab. To account for certification requirements, DOE calculated the difference between the output of the compliance certification equation in 10 CFR 429.26 and the sample mean of DOE's test data to be 0.2 percent. As DOE's certification requirements at 10 CFR 429.26 require manufacturers to report the lower of these two values, DOE reduced the efficiency levels, based on average BLEs, by this value. Using the data that DOE made available immediately following the May 2011 public meeting, both NEMA and the CA Utilities submitted analyses to determine how DOE's data should be adjusted to account for certification requirements and measurement variation.

NEMA's analysis used an assumed design variation and a calculated measurement variation in the compliance certification equation to adjust each ballast efficiency data point. NEMA then suggested that DOE base its efficiency levels on these adjusted data points rather than mean efficiency values. Specifically, NEMA determined the mean BLE for each ballast model by averaging all tested values of that particular model. NEMA then calculated the maximum measurement variation across labs for each category of fluorescent lamp ballast (e.g., 4-foot MBP, 4-foot miniature bipin (MiniBP), or 8-foot recessed double contact (RDC) high output (HO)). NEMA added this highest calculated measurement

variation for each ballast type to a 2.5 percent assumed design tolerance to characterize the total variation. NEMA then entered these variations into the compliance equation to calculate a reduction factor based on sample size of each tested model.

The CA Utilities also conducted an analysis on the data DOE provided following the May 2011 public meeting. They agreed with NEMA that compliance certification requirements should be considered when assessing whether products will meet each standard level. However, they pointed out that NEMA had employed methods to characterize the reported value that were not consistent with the requirements specified in 10 CFR 429.26. Instead, the CA Utilities used individual samples of DOE's efficiency data to calculate both the sample mean and the value determined by the compliance certification equation in 10 CFR 429.26. Then, as directed by the compliance certification regulations, they represented reported efficiency as the lower of the two values. They suggested that DOE base its efficiency levels on these reported values.

Consistent with the April 2011 NOPR, DOE recognizes the importance of considering the variation present in the test data when developing efficiency levels. DOE acknowledges that due to design variation, the reported value for compliance certification may deviate from the sample mean and must be accounted for. As described in the following sections, DOE is considering modifying its approach to account for variation and compliance certification procedures based on the comments provided.

##### A. Compliance Certification Requirements and Design Variation

DOE agrees with both NEMA and the CA Utilities that standard levels should account for the procedures manufacturers must follow to certify compliance with standards. As stated earlier, 10 CFR 429.26 requires manufacturers to test a minimum of four fluorescent lamp ballasts and report the minimum of either the mean efficiency of the samples or the output of a compliance certification equation based on the lower 99 percent confidence limit of the sample. The lower 99 percent confidence limit equation requires a calculation of the standard deviation of the sample set to account for design variation.

Both the NEMA and CA Utilities approaches recommend that, in order to develop efficiency levels, DOE should adjust its mean efficiency data points to represent values similar to those

manufacturers would report to DOE for compliance certification. However, their approaches differ in how they computed the standard deviation to input into the compliance certification equation. The CA Utilities calculated the standard deviation among all samples of a particular ballast model tested at a single lab. NEMA, however, calculated the standard deviation by assuming a 2.5 percent design variation and then adding an additional measurement variation based on DOE's lab-to-lab test data for each ballast category.

DOE disagrees with NEMA's method of applying the compliance certification requirements. Firstly, the test procedure's compliance requirements direct manufacturers to calculate the standard deviation of the tested sample, rather than an assumed population standard deviation. Secondly, this calculation would likely not include data from more than one lab unless manufacturers chose to test their samples of a single ballast model at more than one location. DOE is considering accounting for measurement (specifically lab-to-lab) variation as a separate adjustment to efficiency levels as discussed below in section IV.B.

The CA Utilities evaluated both the sample mean and compliance equation for each ballast model and compared the lower of the two, the reported value, to the standard level. DOE believes the CA Utilities approach for accounting for compliance certification requirements is more consistent with the procedures laid out in 10 CFR 429.26 and is therefore considering using this methodology in the final rule. To facilitate this approach, as discussed earlier, DOE conducted additional testing since publication of the NOPR to increase the sample size of several ballast models in accordance with compliance certification requirements. To account for both certification requirements, DOE has calculated a new data set which represents the reported value for all ballast models. DOE used these reported values to develop the efficiency levels described in section V of today's NODA.

##### B. Measurement Variation

DOE is also considering revising its methodology to account for measurement variation, specifically lab-to-lab variation. DOE received test data from NEMA following the May 2011 public meeting and also received test data from NEMA-member manufacturers. The data from manufacturers allowed DOE to match NEMA test data with the same ballast models tested at DOE's primary and

secondary labs. Using the model-specific test data supplied by several manufacturers (representative of three different manufacturer labs) and DOE's BLE data (representative of the two labs used by DOE), DOE determined that on average, the BLE test data from DOE's primary lab was 0.7 percent more efficient than the average test lab. DOE attributes this offset to systematic lab-to-lab variation and therefore is considering reducing the efficiency levels by 0.7 percent so that they are representative of ballasts tested at the average test lab. This approach is slightly different than that taken in the April 2011 NOPR, which applied a 0.6 percent reduction to efficiency levels, representing the average offset between DOE's primary lab and the least efficient lab (in that case, DOE's secondary lab). DOE believes that adjusting efficiency levels so that they represent the average test lab better characterizes the mean performance of products currently being sold.

## V. Efficiency Levels

### A. Equation

In the NOPR, DOE proposed establishing efficiency levels as logarithmic equations dependent on total lamp arc power. DOE developed this logarithmic relationship by empirically fitting curves to manufacturer product lines present in DOE's test data. DOE is considering changing the contour of the efficiency levels for the final rule to better fit all of the available data. Upon analysis, NEMA's test data show a larger efficiency decrease at lower powers than DOE's data indicate. Although DOE and NEMA generally tested the same types of ballasts, NEMA tested more permutations of ballast factor and number of lamps for each product line, particularly at lower wattages. For example, NEMA's data contained BLE values for 1-lamp 4-foot MBP ballasts with both low and high ballast factors, whereas DOE's data included 1-lamp 4-foot MBP ballasts with only normal ballast factors. Therefore, based on an application of several equation forms of efficiency levels, DOE concluded that a power law equation fits both the NEMA data and DOE's data better than the logarithmic relationship proposed in the April 2011 NOPR. A power law equation takes the form:

$$BLE = \frac{A}{1 + B \cdot \text{power}^{-C}}$$

Where: Power = total measured lamp arc power

Because the NEMA data represents the most complete product lines and thus may represent a more accurate depiction of a BLE-lamp arc power relationship than DOE's initial test data, DOE fit power law regressions to the NEMA test data to calculate the exponent "C." For the instant start and rapid start (IS/RS) ballasts, DOE found the exponent "C" to be 0.25. The exponent 0.25 is also a quantity used in relating power to relative losses (analog of efficiency) for distribution transformers, and fluorescent lamp ballasts similarly employ transformers and inductors. The programmed start (PS) NEMA data, however, suggested a different exponent for ballasts that use the PS starting method. DOE believes that this alternate shape is attributable to the PS ballasts' higher fixed losses due to internal control circuitry and heating of lamp electrodes (cathode heating). As these losses are a larger proportion of total losses at lower powers, the PS product classes have a steeper slope across the range of wattages. Using NEMA's data for PS ballasts, DOE found the exponent "C" to be 0.37.

With exponents set for the two starting method categories, DOE fit the power law equation to the reported value data (calculated in accordance with 10 CFR 429.26 as discussed in section IV.A) by adjusting the coefficient "B" to delineate among criteria such as different product lines, ballasts that operate different lamp types, and other clusters in efficiency data. The most efficient (maximum technologically feasible) efficiency levels closely approximate the NOPR proposals for the highest wattages, but better follow product line efficiency trends at lower wattages.

### B. Preliminary Efficiency Levels

Using the methodology described in the previous section, DOE developed a complete set of efficiency levels for this NODA, which are being considered for the final rule. DOE developed power law curve-fits based on the DOE test data. Then to develop efficiency levels, DOE applied a lab-to-lab adjustment factor (derived from all available test data) to these curve-fits (as discussed in section IV.B). In addition, DOE compared the resulting efficiency levels against the NEMA data to confirm the impacts of the efficiency levels on product availability indicated by the analysis of the DOE data. The following sections describe the efficiency levels considered for each representative product class. An Excel spreadsheet summarizing these levels is available on DOE's Web site: [http://](http://www1.eere.energy.gov/buildings/appliance_standards/residential/fluorescent_lamp_ballasts.html)

[www1.eere.energy.gov/buildings/appliance\\_standards/residential/fluorescent\\_lamp\\_ballasts.html](http://www1.eere.energy.gov/buildings/appliance_standards/residential/fluorescent_lamp_ballasts.html). The final rule and accompanying TSD will include the complete downstream analyses on these levels and results.

### 1. IS and RS Ballasts

DOE developed three efficiency levels for the IS/RS product class. EL1 was designed to eliminate 4-foot MBP T12 ballasts while allowing 4-foot MBP T8 ballast and 8-foot slimline ballasts to comply with energy conservation standards. EL2 corresponds to a level which allows the highest-efficiency product lines from each of the four major ballast manufacturers to comply. DOE defines a full product line as spanning a sufficient diversity of products (spanning several ballast factors, numbers of lamps per ballast, and types of lamps operated). EL3 is the maximum technologically feasible (max tech) level which DOE defines for fluorescent lamp ballasts as the highest level, regardless of manufacturer, that is technologically feasible for a sufficient diversity of commercially available products. Use of those criteria results in an EL3 with which nearly two manufacturer product lines comply.

### 2. PS Ballasts

DOE developed three efficiency levels for the PS product class. The least efficient level (EL1) was designed to eliminate the lowest efficiency 4-foot MBP, 4-foot T5 high output, and 4-foot T5 standard output PS ballasts. This also corresponds to a level at which each of the four major fluorescent lamp ballast manufacturers maintain a diversity of products. EL2 allows full product lines from two major manufacturers. Finally, EL3, the maximum technologically feasible level, was designed to represent the most efficient PS ballasts tested by DOE. EL3 is the highest level that allows one full line of products, regardless of manufacturer.

### 3. Eight-Foot HO Ballasts

For the 8-foot HO IS/RS product class, DOE developed three efficiency levels. For this product class, DOE tested ballasts that operate two lamps, the most common lamp-and-ballast combination. EL1 was designed to just allow the least efficient T12 electronic ballasts, eliminating magnetic ballasts. EL2 allows the least efficient T8 ballast tested and eliminates the vast majority of T12 electronic ballasts. Finally, EL3 was designed to just allow the most efficient T8 ballast tested by DOE.

#### 4. Sign Ballasts

The sign ballast market comprises primarily magnetic and electronic ballasts that operate T12 HO lamps. DOE tested sign ballasts that operate up to one, two, three, four, or six 8-foot T12 HO lamps. The test data showed that sign ballasts exist at two levels of efficiency. Therefore, DOE analyzed a baseline and one efficiency level above that baseline. EL1 was designed to allow a full line of electronic sign ballasts, including ballasts that operate one through six lamps.

#### 5. Residential Ballasts

In the April 2011 NOPR, DOE had proposed that both residential and commercial ballasts could achieve similar levels of efficiency at the highest levels analyzed. Based on the similarity in efficiency, DOE included both ballast types in the same product class. However, for the final rule, after conducting additional testing which indicate that 4-lamp residential ballasts may not be able to achieve the same levels as commercial ballasts, DOE is considering a separate product class for residential ballasts. The additional data for residential ballasts is also available at [http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/fluorescent\\_ballasts\\_nopr\\_public\\_meeting.html](http://www1.eere.energy.gov/buildings/appliance_standards/residential/fluorescent_ballasts_nopr_public_meeting.html). Consequently, DOE has derived and is considering two separate efficiency levels for residential ballasts to incorporate the new data. EL1 was designed to just allow the least efficient T8 ballasts, eliminating T12 residential ballasts. EL2, the maximum technology feasible level, is the highest level that allows a full range of T8 products (including both two- and four-lamp ballasts) to comply.

### VI. Public Participation

#### A. Submission of Comments

DOE will accept comments, data, and information regarding this NODA no later than the date provided in the **DATES** section at the beginning of this notice. Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this notice.

*Submitting comments via <http://www.regulations.gov>.* The <http://www.regulations.gov> Web page will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and

submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to <http://www.regulations.gov> information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information (CBI)). Comments submitted through <http://www.regulations.gov> cannot be claimed as CBI. Comments received through the Web site will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section below.

DOE processes submissions made through <http://www.regulations.gov> before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that <http://www.regulations.gov> provides after you have successfully uploaded your comment.

*Submitting comments via e-mail, hand delivery/courier, or mail.* Comments and documents submitted via e-mail, hand delivery, or mail also will be posted to <http://www.regulations.gov>. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information in a cover letter. Include your first and last names, e-mail address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. E-mail submissions are preferred. If you submit via mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case, it is not necessary to submit printed copies. No facsimiles (faxes) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, that are written in English, and that are free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

*Campaign form letters.* Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

*Confidential business information.* Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via e-mail, postal mail, or hand delivery/courier two well-marked copies: one copy of the document marked "confidential" that includes all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. Submit these documents via e-mail or on a CD, if feasible. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Factors of interest to DOE when evaluating requests to treat submitted information as confidential include: (1) A description of the items; (2) whether and why such items are customarily treated as confidential within the industry; (3) whether the information is generally known by or available from other sources; (4) whether the information has previously been made available to others without obligation concerning its confidentiality; (5) an explanation of the competitive injury to the submitting person which would result from public disclosure; (6) when such information might lose its confidential character due to the passage of time; and (7) why disclosure of the information would be contrary to the public interest.



It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

#### *B. Issues on Which DOE Seeks Comment*

Although DOE welcomes comments on any aspect of this notice, DOE is particularly interested in receiving comments and views of interested parties concerning the following issues:

(1) The conclusion that after removing 0.8 percent NEMA's reduction factor and recalculating lamp arc powers, the remaining differences between DOE and NEMA-provided data are likely due to normal measurement variation;

(2) The methodology used to account for compliance certification requirements and measurement variation in developing efficiency levels;

(3) The appropriateness of using a power law equation to develop efficiency levels and the chosen values for the exponent "C"; and

(4) The efficiency levels considered.

#### **VII. Approval of the Office of the Secretary**

The Secretary of Energy has approved publication of this notice of data availability.

Issued in Washington, DC, on August 18, 2011.

**Timothy Unruh,**

*Program Manager, Federal Energy Management Program, Energy Efficiency and Renewable Energy.*

[FR Doc. 2011-21636 Filed 8-23-11; 8:45 am]

**BILLING CODE 6450-01-P**

#### **DEPARTMENT OF TRANSPORTATION**

##### **Federal Aviation Administration**

##### **14 CFR Part 39**

[Docket No. FAA-2011-0725; Directorate Identifier 2011-NM-065-AD]

**RIN 2120-AA64**

#### **Airworthiness Directives; The Boeing Company Model 767-200, -300, and -300F Series Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for certain model 767-200, -300, and -300F series airplanes. This proposed AD would

require doing certain wiring changes, installing a new relay and necessary wiring in the cabin air conditioning and temperature control system (CACTCS), and performing an operational test of the cooling pack fire suppression system. This AD results from reports of loss of avionics cooling due to an unserviceable relay installed on a panel as part of the CACTCS. We are proposing this AD to prevent loss of electrical equipment bay cooling and the overheating of flight deck instruments, which would result in the eventual loss of primary flight displays, an unusually high pilot workload, and depressurization of the cabin.

**DATES:** We must receive comments on this proposed AD by October 11, 2011.

**ADDRESSES:** You may send comments by any of the following methods:

- **Federal eRulemaking Portal:** Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- **Fax:** 202-493-2251.
- **Mail:** U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- **Hand Delivery:** Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail [me.boecom@boeing.com](mailto:me.boecom@boeing.com); Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Ana Martinez Hueto, Aerospace Engineer,

Cabin Safety and Environmental Systems Branch, ANM-150S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, WA 98057-3356; phone: 425-917-6592; fax: 425-917-6590; e-mail: [ana.m.hueto@faa.gov](mailto:ana.m.hueto@faa.gov).

#### **SUPPLEMENTARY INFORMATION:**

##### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA-2011-0725; Directorate Identifier 2011-NM-065-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

##### **Discussion**

We received reports of loss of avionics cooling due to an unserviceable relay. This relay was one of six relays installed on a panel as part of the CACTCS. The failure of this relay caused a smoke mode solenoid to energize, causing the air conditioning system to go into a Class E fire suppression mode, the right side of the relay pack to turn off, and the left-side relay pack to go into low-flow mode. Over time, this caused insufficient equipment cooling and the slow depressurization of the cabin. This condition, if not corrected, could result in loss of electrical equipment bay cooling and the overheating of flight deck instruments, which would result in the eventual loss of all primary flight displays, an unusually high pilot workload, and depressurization of the cabin.

##### **Relevant Service Information**

We reviewed Boeing Special Attention Service Bulletins 767-21-0246, dated January 7, 2011 (for Model 767-200 and 767-300 series airplanes); and 767-21-0234, dated August 6, 2009 (for Model 767-300F series airplanes). These service bulletins describe procedures for changing the wire bundle route and wiring, installing a new relay and applicable wiring in the CACTCS, and doing an operational test of the cooling pack fire suppression system.