Institutions are listed alphabetically with the programs for the period starting October 1, 2011 and ending September 30, 2012.

**California (19)**
- Allan Hancock College
- Bakersfield College
- California State Polytechnic University-Pomona
- California State University-Bakersfield
- California State University-Fresno
- California State University-Fullerton
- California State University-Monterey Bay
- College of the Desert
- College of the Sequoias
- Fullerton College
- Hartnell College
- Merced College
- Modesto Junior College
- Mt. San Antonio College
- Reedley College
- Santa Ana College
- Southwestern College
- University of California-Merced
- University of California-Riverside

**Florida (3)**
- Barry University
- Florida International University
- Nova Southeastern University

**Illinois (2)**
- Northeastern Illinois University
- Triton College

**Kansas (1)**
- Seward County Community College

**New Mexico (5)**
- Eastern New Mexico University-Main Campus
- Mesalands Community College
- New Mexico Highlands University
- University of New Mexico-Main Campus
- Western New Mexico University

**New York (3)**
- CUNY Bronx Community College
- CUNY Lehman College
- Mercy College-Main Campus

**Puerto Rico (12)**
- Bayamon Central University
- Inter American University of Puerto Rico-Bayamon
- Inter American University of Puerto Rico-Metro
- Inter American University of Puerto Rico-Ponce
- Inter American University of Puerto Rico-San German
- Pontifical Catholic University of Puerto Rico
- Universidad Del Este
- Universidad Del Turabo
- Universidad Metropolitana
- University of Puerto Rico-Humacao
- University of Puerto Rico-Rio Piedras Campus
- University of Puerto Rico-Utuado

**Texas (10)**
- Palo Alto College
- Southwest Texas Junior College
- Sul Ross State University
- Texas A&M University-Corpus Christi
- Texas A&M University-Kingsville
- Texas State Technical College-Harlingen
- University of Texas at Brownsville
- University of Texas at El Paso
- University of Texas at San Antonio
- University of Texas of the Permian Basin

**Washington (2)**
- Heritage University
- Yakima Valley Community College

Done in Washington, DC, this 7th day of June, 2011.

**DEPARTMENT OF ENERGY**

10 CFR Part 431


RIN 1904–AC54

Commercial and Industrial Pumps

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

**ACTION:** Request for Information (RFI).

**SUMMARY:** The Energy Policy and Conservation Act as amended (42 U.S.C. 6291 et seq.) prescribes energy conservation standards for certain commercial and industrial equipment, and requires the Department of Energy (DOE) to administer an energy conservation program for the equipment. In this notice, DOE requests information from interested parties regarding product markets, energy use, test procedures, and energy efficient product designs for commercial and industrial pumps. Additional input and suggestions relevant to this equipment are also welcome.

**DATES:** Written comments and information are requested by July 13, 2011.

**ADDRESSES:** Interested persons may submit comments in writing, identified by docket number EERE–2011–BT–STD–0031, by any of the following methods:

- E-mail: Pumps-RFI-2011-STD-0031@ee.doe.gov. Include EERE–2011–BT–STD–0031 and/or RIN 1904–AC54 in the subject line of the message.
Washington, DC 20585–0121. Phone: (202) 586–2945. Please submit one signed paper original.


● Instructions: All submissions received must include the agency name and docket number.

Docket: For access to the docket to read background documents or comments received, visit the U.S. Department of Energy, Resource Room of the Building Technologies Program, 950 L’Enfant Plaza, SW., Suite 600, Washington, DC 20024. Between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays. Please call Ms. Brenda Edwards at the above telephone number for additional information regarding visiting the Resource Room.


SUPPLEMENTARY INFORMATION:

1. Statutory Authority


Section 6311(A) includes electric motors and pumps as “covered equipment.” Section 6316(a) describes how provisions in Part A (which concerns “Consumer Products Other Than Automobiles”) apply to industrial equipment, which includes pumps. 2

Sections 6314 and 6315 concern test procedures and labeling, respectively, for covered equipment. The provisions in these sections, in combination with section 6316(a), give DOE authority to establish test procedures and to prescribe a labeling rule for pumps.

Based on the information DOE receives in response to this Request for Information, DOE will determine whether to initiate a rulemaking to establish a test procedure, energy conservation standard, or labeling requirement for commercial and industrial pumps.

2. Evaluation of Pumps as Covered Equipment

EPAct lists several specific types of “industrial equipment” as “covered equipment,” including electric motors and pumps. (42 U.S.C. 6311(1)) DOE estimates that commercial, industrial, and agricultural pumps consume approximately 0.63 quads per year of electricity and that technologies exist that can reduce this consumption by approximately 0.190 quads annually. DOE used industry and census data to calculate the average establishment energy use for pumps.

Industrial Pumps

Several estimates have been made of industrial pump electricity use. Four are discussed here. The most recent, made for the DOE Office of Energy Efficiency and Renewable Energy, Energy Technologies program by Energetics Incorporated, states that the total industrial energy use of industrial pumps is estimated to be 185,000 million kWh or 0.63 quads site energy use. The machine drive energy data used in this estimate (http://www1.eere.energy.gov/industry/rd/footprints.html) were primarily provided by the DOE Energy Information Administration’s (EIA’s) Manufacturing Energy Consumption Survey (MECS). The machine drive energy includes pump energy and reflects consumption in the year 2006, when the survey was last completed.

Another recent report for the United Nations (“Motor System Efficiency Supply Curves UNIDO,” Dec. 2010), 3 also used the 2006 MECS data. The total industrial energy use was estimated to be 126,180 million kWh or 0.43 quads site energy use. Part of the reason for the lower estimate in this study is that the authors listed a lower value for the petroleum refining industry than any of the other three studies.

An earlier study conducted for DOE, “United States Industrial Electric Motor Systems Opportunities Assessment, December, 2002,” 4 estimated energy used by pumps in the manufacturing sector. This energy use estimate did not include agriculture, oil and gas extraction, water and wastewater, or mineral mining. Standard Industrial Codes (SICs) from 20–39 (except for 21 and 39) were included in the analysis. The site energy use estimated for the year 1994 was 142,690 million kWh or 0.49 quads site energy use. Table 2.1 lists the energy use for each industry analyzed.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Pump electricity use (millions of kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>6,218</td>
</tr>
<tr>
<td>Textile Mill products</td>
<td>2,949</td>
</tr>
<tr>
<td>Lumber and Wood</td>
<td>1,209</td>
</tr>
<tr>
<td>Furniture and Fixtures</td>
<td>27</td>
</tr>
<tr>
<td>Paper and Allied products</td>
<td>31,309</td>
</tr>
<tr>
<td>Printing and Publishing</td>
<td>84</td>
</tr>
<tr>
<td>Chemical and Allied products</td>
<td>37,591</td>
</tr>
<tr>
<td>Petroleum and Coal products</td>
<td>30,643</td>
</tr>
<tr>
<td>Rubber and Miscellaneous</td>
<td>9,211</td>
</tr>
<tr>
<td>Plastics</td>
<td></td>
</tr>
<tr>
<td>Stone, Clay and Glass products</td>
<td>90</td>
</tr>
<tr>
<td>Primary Metal Industries</td>
<td>7,646</td>
</tr>
<tr>
<td>Fabricated Metal Industries</td>
<td>903</td>
</tr>
<tr>
<td>Industrial Machinery and Equipment</td>
<td>968</td>
</tr>
<tr>
<td>Electronic Equipment</td>
<td></td>
</tr>
<tr>
<td>Transportation Equipment</td>
<td>7,732</td>
</tr>
<tr>
<td>Instruments and Related Products</td>
<td>5,517</td>
</tr>
</tbody>
</table>

The American Council for an Energy-Efficient Economy (ACEEE) 2003 report “Realizing Energy Efficiency Opportunities in Industrial Fan and Pump Systems” summarizes the energy use of pumps in a variety of industrial settings (including manufacturing.


The studies cited above (see Table 2.3) provide estimates of total annual pump energy use ranging from about 126,000 million kWh to 185,000 million kWh (about 0.43 to 0.63 quads) of site energy use. All the studies excluded oil and gas extraction, and water and wastewater pumping. All the studies found that the paper, chemical, and petroleum and coal products manufacturing industries are the three leading users of pump energy. If the total industrial energy use is estimated using the most recent MECS and including all of the petroleum refining industry pump energy use, an estimate of 0.63 quads of site electricity use is derived. The primary energy use is about three times the site energy use, or 1.9 quads.

### Table 2.2—Industrial Sector Electricity Demand and Pump Electricity Use

<table>
<thead>
<tr>
<th>Industry</th>
<th>Electricity demand in 2006 billion kWh</th>
<th>Pumps’ share of electricity use %</th>
<th>Pump electricity use in 2006 billion kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>16.3</td>
<td>25</td>
<td>4.1</td>
</tr>
<tr>
<td>Mining</td>
<td>85.4</td>
<td>7</td>
<td>6.0</td>
</tr>
<tr>
<td>Food Mfg.</td>
<td>78.0</td>
<td>11</td>
<td>8.6</td>
</tr>
<tr>
<td>Textile Product Mills</td>
<td>6.0</td>
<td>14</td>
<td>0.8</td>
</tr>
<tr>
<td>Wood Product Mfg.</td>
<td>28.9</td>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td>Paper Mfg.</td>
<td>122.2</td>
<td>28</td>
<td>34.2</td>
</tr>
<tr>
<td>Petroleum and Coal Products Mfg.</td>
<td>60.1</td>
<td>51</td>
<td>30.7</td>
</tr>
<tr>
<td>Chemical Mfg.</td>
<td>207.1</td>
<td>18</td>
<td>37.3</td>
</tr>
<tr>
<td>Plastics &amp; Rubber Mfg.</td>
<td>53.4</td>
<td>9</td>
<td>4.8</td>
</tr>
<tr>
<td>Nonmetallic Minerals Product Mfg.</td>
<td>44.8</td>
<td>4</td>
<td>1.8</td>
</tr>
<tr>
<td>Primary Metal Mfg.</td>
<td>140.0</td>
<td>2</td>
<td>2.8</td>
</tr>
<tr>
<td>Fabricated Metal Product Mfg.</td>
<td>42.2</td>
<td>7</td>
<td>3.0</td>
</tr>
<tr>
<td>Machinery Mfg.</td>
<td>38.7</td>
<td>8</td>
<td>2.6</td>
</tr>
<tr>
<td>Computer &amp; Electronic Product Mfg.</td>
<td>27.5</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>Transportation Equipment Mfg.</td>
<td>57.7</td>
<td>4</td>
<td>2.3</td>
</tr>
<tr>
<td>Total</td>
<td>1,002.4</td>
<td></td>
<td>140.6</td>
</tr>
</tbody>
</table>

Based on U.S. Census data, the number of establishments involved in mining, manufacturing, and agriculture is estimated as follows.

### Table 2.4—Numbers of Establishments by Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Establishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, 1997</td>
<td>91,000</td>
</tr>
<tr>
<td>Manufacturing, 2005</td>
<td>323,476</td>
</tr>
<tr>
<td>Mining, 1997</td>
<td>21,839</td>
</tr>
<tr>
<td>Total</td>
<td>436,315</td>
</tr>
</tbody>
</table>

Using the highest estimate, the average per-establishment energy use for pumps for agricultural, manufacturing, and mining establishments in 2006 was 1.27 million kWh.

**Commercial Building Heating, Ventilation, and Air Conditioning Pumps**

Based on a 1999 analysis by Arthur D. Little, Inc. (ADL), the average per-establishment energy use for pumps in commercial heating, ventilation, and air conditioning (HVAC) applications for 1999 was about 8.5 MWh, which exceeds 150 kWh for the 12-month period of 1999. The ADL analysis, “Energy Consumption Characteristics of Commercial Building HVAC Systems,” Volume 2, used EIA’s 1999 Commercial Buildings Energy Consumption Survey data to develop its estimate.

a. **Savings Estimate**

Reports cited in this RFI estimate potential energy savings from pumps of 10 percent to 50 percent. Because these estimates include a variety of system and pump efficiency measures including proper sizing of equipment, industrial pumping system. Opportunities Assessment reports a midrange savings of 9.6 percent of pump energy use through system efficiency improvements for a total of 20 percent. ACEEE estimates that “the typical energy savings from fan, pump, or blower-system upgrades vary from 20 percent to 50 percent.”


the lowest energy savings estimate of 10 percent, based on an European Union (EU) study of pump efficiencies (cited in (c) below), is assumed for the pump efficiency alone. If that estimate is converted to primary energy, the savings are estimated to be 0.19 quads. The potential for energy savings is concentrated in paper manufacturing, mining, chemical manufacturing, petroleum and coal products manufacturing, and primary metal manufacturing, which account for 75 percent of the potential total energy savings from industrial pumps.

b. Efficiency Considerations
Pump system efficiencies depend on design factors such as surface roughness, internal clearances, solids handling capability, curve shape, mechanical shaft seal losses, and other factors.

c. Summary of Data and Calculations
Analyses based on data from the 2003 EU “European Guide to Pump Efficiency for Single Stage Centrifugal Pumps” show that for typical flow rates it is reasonable to expect an efficiency improvement of 10 percent from the mean pump efficiency to the maximum practically attainable level.

3. Other Regulatory Programs
The U.S. Environmental Protection Agency and DOE jointly administer the voluntary ENERGY STAR labeling program (http://www.energystar.gov) for various products and equipment. ENERGY STAR currently has no labeling program for energy-efficient pumps. Some states, including California, have prescribed standards and other regulations regarding pumps, in particular for hydronic systems, including a requirement for variable speed drives on pumps larger than 5 horsepower (California Energy Commission. “2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings,” effective January 1, 2010, Section 144(j)).

4. Regulatory Scope
DOE has not previously conducted an energy conservation standard rulemaking for pumps. With this notice, DOE states its intention to evaluate the energy savings potential of energy conservation standards, labels, or both for commercial and industrial pumps. DOE requests information from interested parties regarding product markets, energy use, test procedures, and energy efficient product design. After public comment on this RFI, DOE will consider developing test procedures and energy conservation standards or labels for this equipment.

Test procedures prescribed in accordance with EPACT 2005 “shall be reasonably designed to produce test results which reflect energy efficiency, energy use, and estimated operating costs of a type of industrial equipment (or class thereof) during a representative average use cycle (as determined by the Secretary), and shall not be unduly burdensome to conduct.” (42 U.S.C. 6314) In a test procedure rulemaking, DOE prepares a notice of proposed rulemaking (NOPR) and allows interested parties to present oral and written data, views, and arguments with respect to such procedures. In prescribing new test procedures, DOE takes into account relevant information including technological developments relating to energy use or energy efficiency of pumps.

With respect to rulemakings for energy conservation standards, DOE typically prepares a framework document, which describes the issues, analyses, and process that it is considering for the development of energy conservation standards. After receiving comments on the framework document, DOE typically prepares a preliminary analysis and technical support document (TSD). The preliminary analysis typically provides initial draft analyses of potential energy conservation standards on consumers, manufacturers, and the nation. None of these steps is required by statute. DOE is required to publish a NOPR for new or amended conservation standards. The NOPR presents DOE’s proposal for potential energy conservation standards and a summary of the results of DOE’s supporting technical analysis. The details of DOE’s standards analysis are provided in a TSD that describes both the burdens and benefits of potential standards, pursuant to 42 U.S.C. 6295(o)(B)(i)). After the publication of the NOPR, DOE affords interested persons an opportunity during a period of not less than 60 days to provide oral and written comment. After receiving and considering the comments on the NOPR and not less than 90 days after the publication of the NOPR, DOE issues any final rule prescribing new or amended energy conservation standards.

5. Potential Definition(s)
DOE will consider adding a definition for “Commercial, Industrial, and Agricultural Pumps (Pumps)” in the Code of Federal Regulations to clarify coverage of any potential test procedure or energy conservation standard. There currently is no statutory definition of pumps. DOE is considering the following definitions of pumps for potential test procedures and energy conservation standards and to provide clarity for interested parties as it continues its analyses. DOE seeks feedback from interested parties on the following potential definition(s) of pumps.

a. Definition of Rotodynamic Pumps
Rotodynamic pumps are kinetic machines that impart energy continuously to the pumped fluid by means of a rotating impeller, propeller, or rotor. The most common types of rotodynamic pumps are centrifugal (radial), mixed flow, and axial flow pumps.

i. Centrifugal (Radial Flow)
Centrifugal pumps use bladed impellers with essentially radial outlets to transfer rotational mechanical energy to the fluid, primarily by increasing the fluid kinetic energy (angular

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TABLE 2.5—SUMMARY TABLE OF PRIMARY ENERGY CONSUMPTION AND ESTIMATED SAVINGS

<table>
<thead>
<tr>
<th>Sector</th>
<th>Establishments</th>
<th>Energy per establishment kWh</th>
<th>Energy consumption million kWh</th>
<th>Estimated savings (10%) million kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>436,315</td>
<td>1,272,000</td>
<td>555,000</td>
<td>55,000</td>
</tr>
<tr>
<td>Commercial Building HVAC</td>
<td>4,657,000</td>
<td>8,496</td>
<td>39,565</td>
<td>7,913</td>
</tr>
</tbody>
</table>

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momentum) and also increasing potential energy (static pressure). Kinetic energy is then converted into usable pressure energy in the discharge collector.

Centrifugal pumps that have single inlet impellers usually have a specific speed below approximately 90 \( (4,500) \). Those having double-suction impellers usually have a specific speed below approximately 135 \( (7,000) \). In pumps of this type, the liquid enters the impeller at the hub and flows radially to the periphery, exiting perpendicular to the rotating shaft.

ii. Mixed Flow

This type of pump has a single inlet impeller whereby the flow enters axially and discharges in a mixed axial and radial direction. Pumps of this type usually have a specific speed that ranges from approximately 90 \( (4,500) \) to 200 \( (10,000) \).

iii. Axial Flow

A pump of this type, sometimes called a propeller pump, has a single inlet impeller. The flow enters axially and discharges nearly axially. Pumps of this type usually have a specific speed above approximately 200 \( (10,000) \).

b. Definition of Positive Displacement Pumps

Positive displacement pumps add energy by trapping liquid in a confined space and forcibly moving it out of the pump and into the discharge pipe. This pumping action is accomplished by one of three methods:

1. Reciprocating action of plungers, pistons, bellows or diaphragms;
2. Rotary action of mechanical devices such as gears, screws, vanes, etc.; or
3. Blow case arrangements using pressurized air to displace liquid.

Public Participation

A. Submission of Information

DOE will accept information and data in response to this Request for Information as provided in the DATES section above. Information submitted to the Department by e-mail should be provided in WordPerfect, Microsoft Word, PDF, or text file format. Those responding should avoid the use of special characters or any form of encryption, and wherever possible, comments should include the electronic signature of the author. Comments submitted to the Department by mail or hand delivery/courier should include one signed original paper copy. No telefacsimiles will be accepted.

Comments submitted in response to this notice will become a matter of public record and will be made publicly available.

B. Issues on Which DOE Seeks Information

DOE welcomes comments on the energy use and energy efficiency of commercial and industrial pumps and related issues. DOE is particularly interested in receiving comments from interested parties on the following issues:

1. Definition(s) of pumps, pump product classes, and diversity of pump types within pump product classes;
2. Energy use by pumps as summarized in Table 3-1;
3. Overview of the industrial and commercial pump market, including shipments and efficiencies ranges;
4. Availability and applicability of U.S. and international test procedures for pumps;
5. Assistance and resources available from stakeholders, states, local jurisdictions, and others.

Issued in Washington, DC on June 7, 2011.

Kathleen B. Hogan,
Deputy Assistant Secretary, Energy Efficiency and Renewable Energy.

[FR Doc. 2011–14553 Filed 6–10–11; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
14 CFR Part 71

Proposed Establishment of Class E Airspace; Forest, VA

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This action proposes to establish Class E Airspace at Forest, VA to accommodate new Area Navigation (RNAV) Global Positioning System (GPS) Standard Instrument Approach Procedures serving New London Airport. This action would enhance the safety and airspace management of Instrument Flight Rules (IFR) operations within the National Airspace System.

DATES: Comments must be received on or before July 28, 2011. The Director of the Federal Register approves this incorporation by reference action under Title 1, Code of Federal Regulations, part 51, subject to the annual revision of FAA, Order 7400.9 and publication of conforming amendments.


FOR FURTHER INFORMATION CONTACT: John Fornito, Operations Support Group, Eastern Service Center, Federal Aviation Administration, P.O. Box 20636, Atlanta, Georgia 30320; telephone (404) 305–6364.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to comment on this rule by submitting such written data, views, or arguments, as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal.

Communications should identify both docket numbers (FAA Docket No. FAA–2011–0378; Airspace Docket No. 11–AEA–11) and be submitted in triplicate to the Docket Management System (see ADDRESSES section for address and phone number). You may also submit comments through the Internet at http://www.regulations.gov.

Comments wishing the FAA to acknowledge receipt of their comments on this action must submit with those comments a self-addressed stamped postcard on which the following statement is made: “Comments to Docket No. FAA–2011–0378; Airspace Docket No. 11–AEA–11.” The postcard will be date/time stamped and returned to the commenter.

All communications received before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this notice may be changed in light of the comments received. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of NPRMs

An electronic copy of this document may be downloaded from and