

Energy Conservation Standards Activities

Submitted Pursuant to Section 141 of the
Energy Policy Act of 2005
and to the Conference Report (109-275)
to the FY 2006 Energy and Water
Development Appropriations Act

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List of Acronyms

AFUE – Annual Fuel Utilization Efficiency
ANOPR – Advance Notice of Proposed Rulemaking
ANSI – American National Standards Institute
ASME – American Society of Mechanical Engineers
BT – Building Technologies Program
Btu – British Thermal Unit
DOJ – Department of Justice
EE – Office of Energy Efficiency and Renewable Energy
EIA – Energy Information Administration
ER/BR lamps – Ellipsoidal Reflector / Bulge Reflector Lamps
GRIM – Government Regulatory Impact Model
GC – Office of General Counsel for the U.S. Department of Energy
LCC – Life-Cycle Cost
MIA – Manufacturer Impact Analysis
NETL – National Energy Technology Laboratory
NEMS – National Energy Modeling System
NOPR – Notice of Proposed Rulemaking
NPV – Net Present Value
OMB – Office of Management and Budget
PI – Office of Policy and International Affairs, U.S. Department of Energy
RECS – Residential Energy Consumption Survey
SBA – Small Business Administration
TSD – Technical Support Document
UEC – Unit Energy Consumption

Executive Summary

This report was prepared in response to section 141 of the Energy Policy Act of 2005 (EPACT 2005), Pub. L. 109-58, which pertains to the Department of Energy's (DOE or Department) failure to meet deadlines for new or amended energy conservation standards. The report identifies all products for which DOE has missed the deadlines established in the Energy Policy and Conservation Act (EPCA). (42 U.S.C. 6291 et seq., as amended) It also describes the reasons for such delays and the Department's plan for expeditiously prescribing new or amended standards.

Appliance and equipment standards are clearly one of the Federal Government's most effective energy-saving programs. The Appliance Standards Program is large and complex, and is having a major positive impact. The Appliance Standards Program is also strongly supported by the Administration.

Despite the commitment of this and prior Administrations to the effective implementation of the Appliance Standards Program, there have been numerous delays in the Department's rulemaking activities. Changes to the program ten years ago to address quality issues resulted in a public priority-setting process that focused available resources on those efficiency standards likely to have the largest benefits (e.g., refrigerators, clothes washers, central air conditioners, water heaters, and distribution transformers), and resulted in additional delays to standards likely to produce the smallest energy savings (e.g., direct heating equipment, pool heaters, and dishwashers).

The Department is committed to addressing the backlog and meeting all of its statutory requirements. This report presents multi-year schedules that are firm and achievable and will enable the Department to produce at least one new or amended standard for all products in the backlog no later than June 2011, that is, five years from the issuance of this plan. By June 2011, the Department will issue standards for the following 18 products in the backlog:

- Residential furnaces and boilers
- Mobile home furnaces
- Small furnaces
- Residential water heaters
- Direct heating equipment
- Pool heaters
- Distribution transformers, MV dry-type and liquid-immersed
- Electric motors (1-200 hp)
- Incandescent reflector lamps
- Fluorescent lamps
- Incandescent general service lamps
- Fluorescent lamp ballasts
- Residential dishwashers
- Ranges and ovens (gas and electric) and microwave ovens

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- Residential clothes dryers
- Room air conditioners
- Packaged terminal air conditioners and heat pumps
- Residential central air conditioners and heat pumps

The Department will also issue determinations for small electric motors and high-intensity discharge lamps in fiscal years 2006 and 2010, respectively. Test procedure final rules will be issued for distribution transformers and residential central air conditioners and heat pumps in fiscal years 2006 and 2007, respectively.

Additionally, while addressing the aforementioned products in the backlog, the Department will meet all of the new rulemaking requirements in EPACT 2005. The EPACT 2005 standards final rules that will be issued before June 2011 cover:

- Ceiling fan light kits (other than those with standards prescribed by EPACT 2005)
- Residential dehumidifiers
- Commercial clothes washers
- Refrigerated bottle or canned beverage vending machines
- Ice-cream freezers; self-contained commercial refrigerators, freezers, and refrigerator-freezers without doors; and remote-condensing commercial refrigerators, freezers and refrigerator-freezers

With regard to the rulemaking for ceiling fan light kits (other than those with standards prescribed by EPACT 2005), it is not feasible to complete a rulemaking by the EPACT 2005 final rule deadline of January 1, 2007. Since EPACT 2005 includes a standard that is scheduled to go into effect on January 1, 2009, in the event that the Department cannot meet the deadline, the Department plans to adopt and codify the EPACT 2005 standard in fiscal year 2007, conserving Departmental resources for more complex rulemakings with higher potential benefits.

Also in accordance with EPACT 2005, a determination will be issued in fiscal year 2008 for battery chargers and external power supplies. Regarding test procedures required by EPACT 2005, the Department is scheduled to issue the battery chargers and external power supplies test procedures in fiscal year 2007, a commercial refrigeration test procedure in fiscal year 2008, and will also codify the 11 test procedures prescribed by the legislation in fiscal year 2006.

The Department's rulemaking history and approach moving forward are summarized below and described in detail in this report. The Department's Appliance Standards Program is conducted pursuant to Title III, Part B of the EPCA. (42 U.S.C. 6291-6309) In 1987, the National Appliance Energy Conservation Act amended EPCA to establish national efficiency standards for certain appliances. (National Appliance Energy Conservation Act, Pub. L. 100-12 (1987)) As amended, EPCA also added a schedule for DOE to follow to periodically review and update these standards. The products covered by these standards included refrigerators and freezers, room air conditioners, central air

conditioners and heat pumps, water heaters, furnaces, dishwashers, clothes washers and dryers, direct heating equipment, ranges and ovens, pool heaters, and fluorescent lamp ballasts. The statute requires the Secretary in conducting the rulemakings to set standards at levels that achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified, based upon the consideration and weighting of six factors specified in the legislation, plus other relevant factors.

The Energy Policy Act of 1992 (EPACT 1992) further amended EPCA to expand the coverage of the standards program to include certain commercial and industrial equipment, including commercial heating and air-conditioning equipment, water heaters, certain incandescent and fluorescent lamps, and electric motors. (Energy Policy Act of 1992, Pub. L. 102-486 (1992)) EPACT 1992 also called for determination analyses for small electric motors, high-intensity discharge lamps, and distribution transformers. Finally, EPACT 1992 established maximum water flow-rate requirements for certain plumbing products and provided for voluntary testing and consumer information programs for office equipment, luminaires, and windows.

EPACT 2005 significantly expands and changes the Department's regulatory requirements in this area. EPACT 2005 establishes numerous prescriptive standards for many types of products and expands the Department's authority to regulate other product areas. In addition, EPACT 2005 directs DOE to develop standards for beverage vending machines, and for certain kinds of ceiling fan light kits. DOE must also determine whether to set standards for battery chargers and external power supplies. DOE is given the authority to regulate ceiling fan motor energy use, furnace fans, and products that serve more than one function. It also directs DOE to set standards for ice-cream freezers; self-contained commercial freezers, refrigerator-freezers without doors; and remote condensing commercial refrigerators, freezers, and refrigerator-freezers, and gives DOE authority to set standards for other similar products and for other ice makers. In addition, DOE is required to publish final rules to determine whether to amend the dehumidifier standard, the commercial clothes washer standard, and the automatic ice maker standard.

While the Appliance Standards Program has produced many benefits resulting from past rulemakings, the Department has accumulated a large backlog of rulemakings that were not accomplished in the time allotted by Congress. Rulemaking delays have plagued the Appliance Standards Program almost since its inception. When the Department attempted to accelerate its rulemaking pace in the early 1990s, the Department's decision-making and supporting analysis were questioned by Congress and a one-year moratorium was imposed on the issuance of new or amended standards. During that year, the Department worked with stakeholders to re-invent the standards rulemaking process, resulting in the 1996 Process Rule. 61 FR 36974 (July 15, 1996). The Process Rule committed the Department to more thorough analysis of the likely impacts of efficiency standards under consideration and to earlier and more extensive consultations with stakeholders. The Process Rule also committed the Department to an annual and public priority-setting process designed to focus the Department's resources on those efficiency standards that were likely to produce the largest benefits. The priority-setting process explicitly established low, medium, and high priorities for the covered products.

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This public priority-setting process relegated a number of long-overdue efficiency standards to a low-priority status. The Department indicated that these low-priority standards would not receive resources over the coming year. In fact, no further resources were committed to low-priority rulemakings.

In the ensuing ten years, the Department issued updated efficiency standards for a number of important product categories and completed the analytical work necessary to establish efficiency standards for others. While producing much improved analysis and achieving notable success in spurring joint stakeholder recommendations, the Department has still not been able to address the backlog of rulemaking requirements and remains far behind in its rulemaking obligations. Despite efforts to improve the process, even high priority rulemakings have continued to take much longer than planned.

In this report, the Department identifies several causes for its inability to accelerate the rulemaking pace and reduce the backlog. The report notes that the Process Rule, though credited with improved stakeholder participation, better analysis, joint stakeholder recommendations, and the completion of a number of major rulemakings, also had less desirable consequences on the Department's backlog of overdue efficiency standards. The priority-setting process of the Process Rule openly and intentionally focused resources on a few major rulemakings with large potential benefits but essentially stopped work on a number of other products, even though the statutory deadlines for Departmental action had already passed. Stakeholders actively took part in the priority decision making process that led to delayed rulemakings. The open nature of the new process has also inadvertently introduced delays in the rulemaking schedules as the Department's policy of sharing draft analysis and accepting stakeholder comments on an ongoing basis has resulted in an inefficient and disrupted analysis and decision-making process. Finally, many aspects of the Process Rule that made the rulemaking analyses more robust have also made them more voluminous, complex, and time-consuming.

This report also identifies statutory requirements that lengthen the standards publication schedules. For example, mandatory time for external review and comment on major rulemakings takes 11 months of time during just one standards setting rulemaking. Other statutory requirements for analytical rigor and completeness require sophisticated and lengthy analysis. With the best of intentions, the 1996 Process Rule established a goal that DOE could meet all of these requirements and complete a standards rulemaking in 36 months.

The Department has not managed these complexities well, and has produced only one rule within the 36-month timetable, the residential central air conditioner rule. In addition to the unintended consequences of the Process Rule and its explicit prioritization of many products as low priority, the report also documents several deficiencies in the review and concurrence process that have contributed to delays. The time used to review and concur on the rulemaking analysis, supporting documents, and Federal Register notices represents a significant portion of the rulemaking schedule. While some of these reviews are by other entities such as the Office of Management and Budget (OMB), the

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Department of Justice (DOJ) and the Small Business Administration (SBA), the major delays have occurred internally within the Department.

Recognition of these complexities and the resultant delays are now receiving significant senior management attention. New management processes, including review and reporting requirements, have been instituted. Productivity improvements in the rulemaking program are taking effect and will significantly increase the number of new standards to be issued. The Department is committed to improving the standards rulemaking process. After extensive review of the root causes of the rulemaking delays, this report documents the Department's recent and forthcoming process improvements that will address these delays. These process improvements will increase the program's standards output by increasing the number of products in the active rulemaking process, by bundling multiple products into single rulemakings, by shortening the time to complete successive rulemakings, and by implementing other productivity-enhancing techniques.

Even as the Department implements these process improvements to increase output, it recognizes that work cannot begin on all requirements simultaneously. Rulemakings will be scheduled in consideration of statutory requirements and other factors. This was the focus of a public meeting held by the Department on November 15, 2005. In the past, the Process Rule priority-setting process emphasized potential energy savings. The Department has established new schedules to address the backlog in standards rulemakings and to meet the requirements of EPACT 2005. In an effort to meet these schedules and expeditiously clear the backlog, the Department's schedule has no provision until after fiscal year 2011 for optional rulemakings or rulemakings initiated in response to future petitions. Prior to fiscal year 2012, the Department shall neither consider rulemakings in response to stakeholder petitions, nor will it conduct rulemakings on products where it is authorized but not statutorily required to do so. As examples, the Department will not consider starting rulemakings for residential refrigerators or residential furnace fans until fiscal year 2012.

These multi-year schedules are based on the statutory requirements and are designed to be firm and achievable. They incorporate many of the public comments received on the Department's proposed approaches and reflect the adoption of all the new and recently implemented process improvements. Implementation of these schedules, which the Department has already initiated, will result in expeditious completion of the currently active rulemakings and compliance with all deadlines for the newly covered EPACT 2005 products. The schedules also address all backlog rulemakings. The schedules reflect a substantial commitment of resources by the Department that, if approved by Congress, will enable the Department to produce at least one new or amended standard for all products in the backlog no later than June of 2011, that is, just five years from the issuance of this plan.

The Department has a very full regulatory agenda, and is working aggressively to meet its rulemaking requirements. The technical and economic analysis must be thorough and accurate in order to set standards levels that are technologically feasible, economically

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justified and will result in significant conservation of energy, as required by statute. The Department firmly believes that accelerating rulemaking output beyond what is proposed in this plan would require compromises on the analytical work that could lead to poor quality analysis and result in overly contentious and potentially flawed rulemakings. In this manner, an overly accelerated schedule could lead to challenges to the Department's regulations and ultimately slow the implementation of the standards.

Issuing one standard for every product in the backlog in five years, simultaneous with implementation of the new requirements of EPACT 2005, will be challenging but achievable. The Department has already begun in fiscal year 2006 to implement the accelerated schedules.

1 Introduction

This report was prepared in response to section 141 of the Energy Policy Act of 2005 (EPACT 2005), Pub. L. 109-58, which pertains to the Department of Energy's (DOE or Department) failure to comply with deadlines for new or amended energy conservation standards. This report also satisfies the requirement of the House Appropriations Committee for a report on the Appliance Standards Program.

Appliance and equipment standards are clearly one of the Federal Government's most effective energy-saving programs. The Appliance Standards Program is large and complex, and is having a positive impact. Federal residential energy efficiency standards that have gone into effect since 1988, or will take effect by the end of 2007, will save a cumulative total of 34 quads (quadrillion (10^{15}) British thermal units (Btu)) of energy by the year 2020, and 54 quads by 2030 (in 2004, total U.S. consumption of primary energy was about 100 quads). Roughly 75 percent of these savings are attributable to efficiency standards for just four product classes (refrigerators, clothes washers, water heaters, and central air conditioners), with the other regulated residential product classes accounting for the remaining 25 percent. The estimated cumulative net present value of consumer benefit amounts to \$93 billion by 2020, and grows to \$125 billion by 2030, while the cumulative cost of DOE's program to establish and implement these standards is in the range of \$200-250 million.¹ The benefits are even greater when the effects of energy efficiency standards for commercial products are taken into consideration.

The Appliance Standards Program is strongly supported by the Administration. The Administration's National Energy Policy explicitly supports the Appliance Standards Program, and includes recommendations that higher standards be set for existing covered products where technologically feasible and economically justified, and that the program should be expanded to include additional appliances where technologically feasible and economically justified.² The Department is committed to ensuring that the program is effectively administered and implemented.

Chapter 2 of the report presents a history of the Appliance Standards Program and the Process Rule adopted in 1996 that gives the reader a full understanding of the historical context and statutory requirements for the program.

Chapter 3 summarizes all rulemaking activities and requirements under existing statutes, including EPACT 2005. This section will allow the reader to appreciate the full scope and complexity of the requirements. This chapter documents significant rulemaking activity that has occurred and is ongoing.

¹ "Realized and Prospective Impacts of U.S. Energy Efficiency Standards for Residential Appliances: 2004 Update," S. Meyers, J. McMahon, M. McNeil, Lawrence Berkeley National Laboratory, May 2005, LBNL-56417.

² National Energy Policy: Report of the National Energy Policy Development Group, Chapter 4, May 2001.

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Chapter 4 provides a detailed description of the Department's rulemaking processes and the statutory requirements for conducting rulemakings.

Chapter 5 describes the reasons for the delays in completing rulemakings, including the unintended consequences of the Process Rule that introduced delays into rulemaking activities. In short, this chapter lays out the problems and issues facing the Department that must be addressed.

Chapter 6 presents the Department's plan for addressing the problems and issues identified in Chapter 5, and explains several productivity enhancements that will be used to significantly increase the production of energy conservation standards.

Chapter 7 presents and explains the multi-year schedule the Department will follow as it addresses the backlog and implements the requirements of EPACT 2005. This chapter documents the public process and stakeholder comments that helped shape the Department's schedules. Chapter 7 also discusses the resource requirements needed to implement the multi-year schedules.

Appendix A provides a status report on the three high-priority rulemaking activities as requested by the Appropriations Committee.

2 History of the Appliance Standards Program

2.1 *Energy Policy and Conservation Act*

The Department of Energy's Appliance Standards Program is conducted pursuant to Title III, Part B, of the Energy Policy and Conservation Act (EPCA). (Pub. L. 94-163) EPCA established test procedures, conservation targets (followed by standards if targets are not set), and labeling requirements for certain major household appliances. EPCA also provided for DOE to establish test procedures for evaluating compliance by manufacturers with applicable efficiency standards. In 1978, DOE was authorized to set mandatory energy efficiency standards for 13 household appliances and products under the National Energy Conservation and Policy Act (NECPA). (Pub. L. 95-619)

In 1987, EPCA was amended and updated by the National Appliance Energy Conservation Act (NAECA), which superseded existing State requirements. (Pub. L. 100-12) The products covered by these standards included refrigerators and freezers, room air conditioners, central air conditioners and heat pumps, water heaters, furnaces, dishwashers, clothes washers and dryers, direct heating equipment, ranges and ovens, and pool heaters. NAECA also contains requirements and deadlines for updating the initial standards through rulemakings conducted by DOE using criteria included in the law. Fluorescent lamp ballasts were added by an amendment in 1988. In conducting the rulemakings to update the standards, the Secretary is to set standards at levels that achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. NAECA 1988 added ballasts to the statutory list of covered products. (Pub. L. 100-357)

The Energy Policy Act of 1992 (EPACT 1992) further amended EPCA to expand the coverage of the standards program to include certain industrial equipment, including commercial heating and air-conditioning equipment, water heaters, certain incandescent and fluorescent lamps, distribution transformers, and electric motors. (Pub. L. 102-486) EPACT 1992 established maximum water flow-rate requirements for certain plumbing products and provided for voluntary testing and consumer information programs for office equipment and luminaires. EPACT 1992 also established a labeling program for commercial products. It also allowed for the future development of standards for many other products.

In September 1995, DOE announced a formal effort to consider further improvements to the process used to develop appliance efficiency standards. On July 15, 1996, the Department published Procedures for Consideration of New or Revised Energy Conservation Standards for Consumer Products, which established guidelines for DOE regarding the consideration and promulgation of new or amended appliance efficiency standards under EPCA. 61 FR 36974 (July 15, 1996).

EPACT 2005 significantly expands and changes the Department's regulatory requirements in appliance standards. EPACT 2005 establishes numerous prescriptive standards for many types of products and expands the Department's authority to regulate other product areas. New standards are legislated for ceiling fan light kits, dehumidifiers, unit heaters, torchiere

lamps, medium base compact fluorescent lamps, fluorescent lamp ballasts, mercury vapor lamp ballasts, illuminated exit signs, traffic signals and pedestrian signals, commercial pre-rinse spray valves, low voltage dry-type distribution transformers, commercial package air-conditioning and heating equipment; commercial refrigerators, freezers, and refrigerator-freezers; automatic commercial ice makers; and commercial clothes washers.

2.2 Process Improvement

In August 1995, Congress passed the Department of the Interior and Related Agencies Appropriations Act of 1996 (H.R. 1977). Although not signed into law, this act stated that none of the funds appropriated could be used by the Department to propose, issue, or prescribe any new or amended efficiency standards.

In September 1995, the Department announced a formal effort to consider further improvements to the process used to develop appliance efficiency standards, calling on energy efficiency groups, manufacturers, trade associations, State agencies, utilities and other interested parties to provide input to guide the Department. On July 15, 1996, the Department published Procedures for Consideration of New or Revised Energy Conservation Standards for Consumer Products (hereinafter referred to as the Process Rule). 61 FR 36974.

The Process Rule set forth guidelines for developing efficiency standards. These guidelines are designed to provide for greater and more productive interaction between the Department and interested parties throughout the process. They are also designed so that key analyses are performed earlier in the process, with early opportunities for public input to, and comment on, the analyses. The guidelines are consistent with the procedural requirements of law, but add some important steps to enhance the process. These improvements can be summarized as follows.

- Provide for early input from stakeholders
- Increase the predictability of the rulemaking timetable
- Reduce the time and cost of developing standards
- Increase the use of outside technical expertise
- Eliminate problematic design options early in the process
- Conduct thorough analyses of impacts
- Use transparent and robust analytical methods
- Fully consider non-regulatory approaches
- Articulate policies to guide the selection of standards
- Support efforts to build consensus on standards
- Establish an annual priority-setting process to focus available resources on those efficiency standards likely to produce the greatest benefits

The process was designed with stakeholders in mind and with the intent to enhance the productivity of the program through improved communication. Collaboration and interaction with stakeholders has enhanced the quality of the resulting rules, typically by way of additional analysis conducted as issues are raised.

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The priority-setting process in place for the last nine years originated in the Process Rule and was implemented annually. This process was developed in response to an explicit recognition by the Department and affected stakeholders that sufficient resources were not available to permit work simultaneously on all efficiency standards rulemakings mandated by statute. As part of this priority-setting process, the Department analyzed the likely impacts of all pending efficiency standards rulemakings and, based on this analysis, categorized each rulemaking as high, medium, or low priority. High priority rulemakings would receive the bulk of all resources appropriated to the program for the coming fiscal year. Medium priority rulemakings would receive some resources, sufficient for the completion of certain preparatory analyses. Low-priority rulemakings would receive no resources. The Department's analysis and priority rankings of pending rulemakings were made available to the public and comments were solicited. Every two years, a public meeting was held to discuss this priority-setting process and to solicit stakeholder input. During the nine years that this priority-setting process was followed, it enjoyed widespread support from energy efficiency advocates, product manufacturers, and other stakeholders. It focused Departmental resources on the completion of a number of efficiency standards that are expected to produce very large energy savings and economic benefits, including refrigerators, clothes washers, central air conditioners, water heaters, fluorescent lamp ballasts, and distribution transformers. However, it also resulted in the postponement of further work on many efficiency standards that could also have produced some benefits, including direct heating equipment, pool heaters, dishwashers, and others.

3 Rulemaking Activities and Statutory Dates

This section of the report summarizes all of the Department's rulemaking responsibilities and the program's progress towards meeting its goals.

3.1 Overview of Statutory Requirements

The four tables that follow provide the appliance and equipment standards mandated by EPCA as amended, including the provisions in EPACT 2005. The products are divided into tables based on the authorizing legislation. Tables 1 and 2 address the statutory requirements from NAECA (and NAECA 1988) and EPACT 1992, respectively. Table 3 addresses the statutory requirements of EPACT 2005, and Table 4 addresses products for which EPACT 2005 grants DOE statutory authority to regulate but does not require DOE to conduct a rulemaking.

Tables 1, 2, and 3 identify the original standards dates (for standards prescribed by statute) and the dates set by law for all updates and revisions. In cases where DOE has completed a rulemaking, the actual dates are shown. Legislation generally requires that two updates to a statutorily prescribed standard be completed. If a standard is statutorily prescribed, any additional mandated rulemakings are referred to by DOE as updates or revisions. However, where no standard is prescribed by the statute, the first update column contains the initial rulemaking by DOE and the second update column contains the first revision to the initial rulemaking (as clearly indicated by the parenthetical notes in the table column headings).

The following tables also indicate the program's progress in meeting its statutory requirements. Blank cells under a *statutory requirement* heading indicate the absence of a statutory requirement. Under the *actual* column heading, those items in the backlog are clearly designated as such.

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Table 1 Appliance and Equipment Standards Required by NAECA

Appliance and Equipment Standards Required by NAECA										
Product	Standard Specified in Statute?	Standard Effective Date	First Update (or initial if standard not specified by statute)				Second Update (or first update if no initial standard)			
			Statutory Requirement		Actual		Statutory Requirement		Actual	
			Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date
Refrigerators, Refrigerator-Freezers, and Freezers [Residential]	Yes	January 1990	July 1989	January 1993	November 1989	January 1993	5 years after previous final rule (Nov. 1994)	5 years after previous effective date (January 1998)	April 1997	July 2001
Room Air Conditioners [Residential]	Yes	January 1990	January 1992	January 1995	September 1997	October 2000	5 years after previous final rule (September 2002)	5 years after previous effective date (October 2005)	Backlog	Backlog
Central Air Conditioners and Heat Pumps [Residential]	Yes	January 1992 (split), January 1993 (single-package)	January 1994 (SEER and HSPF)	January 1999 (SEER), January 2002 (HSPF)	January 2001	January 2006	January 2001	January 2006	Backlog	Backlog
Water Heaters [Residential]	Yes	January 1990	January 1992	January 1995	January 2001	January 2004	January 2000	January 2005	Backlog	Backlog
Pool Heaters [Residential]	Yes	January 1990	January 1992	January 1995	Backlog	Backlog	January 2000	January 2005	Backlog	Backlog
Direct Heating Equipment [Residential]	Yes	January 1990	January 1992	January 1995	Backlog	Backlog	January 2000	January 2005	Backlog	Backlog
Furnaces and Boilers [Residential]	Yes	January 1992	January 1994	January 2002	Backlog, ANOPR published July 2004	Backlog	January 2007	January 2012		
Small Furnaces, <45 kBtu/hr [Residential]	No	NA	January 1989	January 1992	November 1989	January 1992	January 1994	January 2002	Backlog, ANOPR published in 2004	Backlog

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Appliance and Equipment Standards Required by NAECA										
Product	Standard Specified in Statute?	Standard Effective Date	First Update (or initial if standard not specified by statute)				Second Update (or first update if no initial standard)			
			Statutory Requirement		Actual		Statutory Requirement		Actual	
			Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date
Mobile Home Furnaces [Residential]	Yes	September 1990	January 1992	January 1994	Backlog, ANOPR published in 2004	Backlog	January 1994	January 2002	Backlog	Backlog
Dishwashers [Residential]	Yes	January 1988	January 1990	January 1993	May 1991	May 1994	5 years after previous final rule (May 1996)	5 years after previous effective date (May 1999)	Backlog	Backlog
Clothes Washers [Residential]	Yes	January 1988	January 1990	January 1993	May 1991	May 1994	5 years after previous final rule (May 1996)	5 years after previous effective date (May 1999)	January 2001	January 2004
Clothes Dryers [Residential]	Yes	January 1988	January 1990	January 1993	May 1991	May 1994	5 years after previous final rule (May 1996)	5 years after previous effective date (May 1999)	Backlog	Backlog
Ranges and Ovens and Microwave Ovens [Residential]	Yes	January 1990	January 1992	January 1995	September 1998 (electric products only) Backlog (for gas products)	October 1998 (electric products only) Backlog (for gas products)	January 1997	January 2000	Backlog	Backlog
Fluorescent Lamp Ballasts [Commercial]	Yes	1990/ 1991	January 1992	January 1995	September 2000	April 2005	5 years after previous final rule (September 2005)	5 years after previous effective date (April 2010)	Backlog	Backlog

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Table 2 Appliance and Equipment Standards Required by EPACT 1992

Appliance and Equipment Standards Required by EPACT 1992										
Product	Standard Specified in Statute?	Standard Effective Date	First Update (or initial if standard not specified by statute)				Second Update (or first update if no initial standard)			
			Statutory Requirement		Actual		Statutory Requirement		Actual	
			Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date
Incandescent General Service Lamps [Residential]	No	NA	3.5 years after FTC rule issued (Nov. 1997)	3 years after final rule (Nov. 2000)	Backlog	Backlog	April 2002	April 2005	Backlog	Backlog
Fluorescent Lamps [Commercial]	Yes	April 1994 / October 1995	April 1997	April 2000	Backlog	Backlog	April 2002	April 2005	Backlog	Backlog
Incandescent Reflector Lamps [Commercial]	Yes	October 1995	April 1997	April 2000	Backlog	Backlog	April 2002	April 2005	Backlog	Backlog
Electric Motors (1-200 hp) [Commercial]	Yes	October 1997 / October 1999	October 1999 / October 2001	October 2002 / October 2004	Backlog	Backlog	2 years after effective date of previous standard	5 years after effective date of previous standard		
Commercial Air-Cooled Unitary AC & HP, 65-240 kBtu/hr	ASHRAE 90.1 (1989)	1992	Triggered by Oct. 1999 revision of ASHRAE 90.1	NA	<i>Withdrawn</i> <i>Preempted by EPACT 2005</i>		NA			
Single-Packaged Vertical Units (SPVU); Commercial Oil- and Gas-Fired Packaged Boilers; Tankless Gas-Fired Instantaneous Water Heaters	ASHRAE 90.1 (1989)	1992	Revision has not been triggered by ASHRAE.							
Packaged Terminal Air Conditioners and Heat Pumps	ASHRAE 90.1 (1989)	1992	<p>Backlog. ASHRAE revised Standard 90.1 in October 1999.</p> <p>There are no specific legal deadlines for final rules and effective dates. If ASHRAE revises Standard 90.1 again, DOE will need to update standards again.</p>							
Commercial Air-Cooled AC & HP, 3-phase, <65 kBtu/hr	ASHRAE 90.1 (1989)	1992	<p>Will adopt new ASHRAE standard after ASHRAE acts.</p> <p>There are no specific legal deadlines for final rules and effective dates. If ASHRAE revises Standard 90.1 again, DOE will need to update standards again.</p>							

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Appliance and Equipment Standards Required by EPACT 1992										
Product	Standard Specified in Statute?	Standard Effective Date	First Update (or initial if standard not specified by statute)				Second Update (or first update if no initial standard)			
			Statutory Requirement		Actual		Statutory Requirement		Actual	
			Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date
Commercial Warm Air Furnaces	ASHRAE 90.1 (1989)	1992	Triggered by Oct. 1999 revision of ASHRAE 90.1	NA	January 2001	October 2003	ASHRAE revised Standard 90.1 in October 1999. There are no specific legal deadlines for final rules and effective dates. If ASHRAE revises Standard 90.1 again, DOE will need to update standards again.			
Commercial Water-Cooled AC & Water-Source HP	ASHRAE 90.1 (1989)	1992	Triggered by Oct. 1999 revision of ASHRAE 90.1	NA	January 2001	October 2003	ASHRAE revised Standard 90.1 in October 1999. There are no specific legal deadlines for final rules and effective dates. If ASHRAE revises Standard 90.1 again, DOE will need to update standards again.			
Commercial Water Heaters	ASHRAE 90.1 (1989)	1992	Triggered by Oct. 1999 revision of ASHRAE 90.1	NA	January 2001	October 2003	ASHRAE revised Standard 90.1 in October 1999. There are no specific legal deadlines for final rules and effective dates. If ASHRAE revises Standard 90.1 again, DOE will need to update standards again.			
Plumbing Products (Showerheads, Faucets, and Toilets/ Urinals) [Commercial]	Yes	January 1994	12 months after changes to ASME/ANSI standards or 5 years after previous standard	12 months after final rule	ASME/ANSI standards have not been revised		12 months after changes to ASME/ANSI standards or 5 years after previous standard	12 months after final rule		
Medium-voltage Dry-type and liquid-immersed Distribution Transformers [Commercial]	No	NA	October 1996, if positive determination	October 1999, if positive determination	Backlog, determination made in October 1997. ANOPR published July 2004.	Backlog				

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Appliance and Equipment Standards Required by EPACK 1992										
Product	Standard Specified in Statute?	Standard Effective Date	First Update (or initial if standard not specified by statute)				Second Update (or first update if no initial standard)			
			Statutory Requirement		Actual		Statutory Requirement		Actual	
			Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date	Final Rule Date	Effective Date
HID Lamps [Commercial]	No	NA	October 1996, if positive determination	October 1999, if positive determination	Backlog, if positive determination	Backlog, if positive determination				
Small Electric Motors [Commercial]	No	NA	October 1996, if positive determination	October 2001 / October 2003, if positive determination	Backlog, if positive determination	Backlog, if positive determination				

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Table 3 Appliance and Equipment Standards Required by EPACT 2005

Appliance and Equipment Standards Required by EPACT 2005						
Product	Standard Specified in Statute?	Standard Effective Date	First Update (or initial if standard not specified by statute)		Second Update (or first update if no initial standard)	
			Statutory Requirement		Statutory Requirement	
			Final Rule Date	Effective Date	Final Rule Date	Effective Date
Ceiling Fans [Residential]	Yes	January 2007				
Ceiling Fan Light Kits [Residential]	Yes	January 2007	January 2007 (for those lighting kits not covered by EPACT 2005)	January 2009		
Compact Fluorescent Lamps, Medium Base [Residential]	Yes	January 2006				
Dehumidifiers [Residential]	Yes	October 2007	October 2009	October 2012		
Package Air-Conditioning and Heating Equipment, Small [Commercial]	Yes	January 2010				
Package Air-Conditioning and Heating Equipment, Large [Commercial]	Yes	January 2010				
Package Air-Conditioning and Heating Equipment, Very Large (240-760 kBtu/hr) [Commercial]	Yes	January 2010				
Unit Heaters [Commercial]	Yes	August 2008				
Automatic Ice Makers [Commercial]	Yes	January 2010	January 2015	3 to 5 years after final rule date	5 years after previous rule effective date (Jan. 2023 / Jan. 2025)	3 to 5 years after final rule date
Self-Contained Commercial Refrigerators, Freezers, and Refrigerator-Freezers with Doors for Holding Temperature Applications [Commercial]	Yes	January 2010				
Self-Contained Commercial Refrigerators with Doors for Pull-Down Temperature Applications [Commercial]	Yes	January 2010				

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Appliance and Equipment Standards Required by EPACT 2005						
Product	Standard Specified in Statute?	Standard Effective Date	First Update (or initial if standard not specified by statute)		Second Update (or first update if no initial standard)	
			Statutory Requirement		Statutory Requirement	
			Final Rule Date	Effective Date	Final Rule Date	Effective Date
Ice-Cream Freezers, Self-Contained Commercial Refrigerators, Freezers, and Refrigerator-Freezers without doors, and remote-condensing commercial refrigerators, freezers, and refrigerator-freezers [Commercial]	No	NA	January 2009	January 2012	January 2013*	January 2016 (or January 2018 if 3-year compliance period is not adequate)*
Refrigerated Bottle or Canned Beverage Vending Machines [Commercial]	No	NA	August 2009	August 2012		
Clothes Washers [Commercial]	Yes	January 2007	January 2010	January 2013	January 2015	January 2018
Distribution Transformers, Low-Voltage Dry-Type [Commercial]	Yes	January 2007				
Fluorescent Lamp Ballasts [Commercial]	Yes	2009/2010				
Illuminated Exit Signs [Commercial]	Yes	January 2006				
Mercury Vapor Lamp Ballasts [Commercial]	Yes	January 2008 (Product Ban)				
Torchieres [Commercial]	Yes	January 2006				
Traffic Signal Modules and Pedestrian Modules [Commercial]	Yes	January 2006				
Prerinse Spray Valves [Commercial]	Yes	January 2006				

*Second update required with final rule due 3 to 5 years after the effective date of the first update.

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Table 4 Appliance and Equipment Standards Authorized but not Required by EPACT 2005*

Appliance and Equipment Standards Authorized but not Required by EPACT 2005*					
Product	Note	First Update Schedule		Second Update Schedule	
		Final Rule Requirement	Effective Date	Final Rule Requirement	Effective Date
Battery Chargers and External Power Supplies [Residential]	Will develop if determination notice (due Aug. 2008) is positive	No deadline			
Ceiling Fans (other than design standard) [Residential]	Optional standard	No deadline			
Ceiling Fan Light Kits [Residential]	Optional standard	Possible after January 2010	At least 2 years after final rule date		
Combination Appliances [Residential]	Optional standard	No deadline			
Furnace Fans [Residential]	Optional standard	No deadline			
Automatic Ice Makers, Other Types [Commercial]	Optional standard	5 years after optional rulemaking takes effect	3 to 5 years after final rule date	5 years after first amendment takes effect	3 to 5 years after final rule date
Commercial Refrigerators, Freezers, and Refrigerator-Freezers, Other Types	Optional standard	No deadline			

* This table also includes the contingent rulemaking for battery chargers and external power supplies.

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3.2 DOE Charge and Challenges

3.2.1 Backlog and Pre-EPACT 2005

The backlog consists of past statutory requirements, where the deadline has passed, from NAECA or EPACT 1992. The backlog may be enumerated in terms of products or standards. As may be observed from the preceding tables, there are currently 18 products with standards in the backlog. Since 7 of the products are 2 standards behind, there are 25 standards in the backlog (18 plus 7). In addition to these 25 standards in the backlog, there are two products with determination analyses in the backlog – high-intensity discharge lamps and small electric motors.

Of the 25 backlogged standards, 4 standards rulemakings are active. The four standards actively being developed are: furnaces and boilers, small furnaces less than 45 kBtu/hr, mobile home furnaces, and distribution transformers (MV dry-type and liquid immersed). The furnaces and boilers standard, the small furnaces standard, and the mobile home furnaces standard have been consolidated into a single rulemaking.

Of the 25 backlogged standards, there are 13 additional standards represented by products that have two standards in the backlog. There are 7 *products* that are 2 standards cycles behind (representing 13 additional backlogged standards instead of 14 additional backlogged standards because mobile home furnaces are discussed above). The seven products that have two backlogged standards cycles are direct heating equipment, pool heaters, mobile home furnaces, fluorescent lamps, incandescent general service lamps, incandescent reflector lamps, and ranges and ovens and microwave ovens (only gas products have two standard cycles in the backlog). Additionally, two products – electric motors (1-200 hp) and furnaces and boilers – are backlogged products with two required standards updates, but the second cycles for these two products are not technically in the backlog and are therefore not included in the count of 25 backlogged standards. The second cycle for electric motors is linked to completion of the first cycle, while the second furnace and boiler cycle is not due until January 2007.

There are 8 additional products with standards in the backlog which brings the total number of backlogged standards to 25 (4 plus 13 plus 8): packaged terminal air conditioners and heat pumps, residential central air conditioners and heat pumps, room air conditioners, residential water heaters, electric motors (1-200 hp), fluorescent lamp ballasts, residential dishwashers, and residential clothes dryers.

In addition to the backlogged standards discussed above, there are 12 additional products for which DOE must or may need to issue standards based upon pre-EPACT 2005 requirements, some of which are contingent upon DOE decisions or industry actions. **These standards are not in the backlog.** Three ASHRAE products in this category are: air conditioners and heat pumps less than 65 kBtu/hr (3-phase), oil- and gas-fired packaged boilers, and tankless gas-fired instantaneous water heaters. Currently, DOE is waiting for ASHRAE to establish new standards for air conditioners and heat pumps less than 65 kBtu/hr (3-phase). Four other ASHRAE products where action could be triggered in the future are single package vertical air conditioners and heat pumps, warm air furnaces, water-cooled air conditioners and water-source heat pumps,

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and commercial water heaters. Residential furnaces and boilers and electric motors (1-200 hp) were both mentioned above. There are second updates for these two products that are not backlogged, but must be completed. Three additional standards that DOE may need to issue are for plumbing products (contingent upon American Society of Mechanical Engineers (ASME) /American National Standards Institute (ANSI) action), small electric motors, and high-intensity discharge lamps. For the latter two, standards only need to be issued if the forthcoming determinations are positive.

There are a few test procedure rulemakings and issues that need to be addressed for pre-EPACT 2005 products. The test procedure for distribution transformers (MV dry-type and liquid-immersed) needs to be completed. If the determination analysis for either high-intensity discharge lamps or small electric motors is positive, test procedures will be necessary. The residential central air conditioner and heat pump test procedure needs revision, while other existing test procedures are not currently able to address rapidly changing technologies such as embedded chipsets and smart logic circuits. Finally, there is a test cloth issue that needs resolution with the clothes washer test procedure.

3.2.2 EPACT 2005

EPACT 2005 prescribed standards for *19 products* as shown in Table 3. If ceiling fans are grouped with ceiling fan light kits, the three packaged air-conditioning products are grouped together, and the two commercial refrigeration products for which EPACT 2005 prescribes standards are grouped together, there are *15 prescribed standards*. The Department issued a final rule *en masse* for these 15 prescribed standards on October 18, 2005. 70 FR 60407 (October 18, 2005).

Additionally, as shown in Table 3, EPACT 2005 also requires DOE to develop ten standards including initial standards for commercial refrigeration products (two initial standards). EPACT 2005 also sets up a determination analysis for battery chargers and external power supplies (due August 8, 2008), with a final standard to be subsequently issued if the determination is positive (see Table 4). Table 4 also lists several optional activities that EPACT 2005 authorizes DOE to conduct.

Although not shown in the previous tables, EPACT 2005 also prescribes 11 test procedures and requires DOE to develop three test procedures. The 11 prescribed test procedures are for ceiling fan light kits, dehumidifiers, compact fluorescent lamps, unit heaters, automatic commercial ice makers, commercial pre-rinse spray valves, illuminated exit signs, traffic signal modules and pedestrian modules, bottle or canned beverage vending machines, very large commercial package air-conditioning and heating equipment, and various commercial refrigeration products. EPACT 2005 requires DOE to develop test procedures for other commercial refrigeration products, battery chargers and external power supplies, and torchieres. The torchiere test procedure is not explicitly required by EPACT 2005, but since EPACT 2005 establishes a standard for this product, EPACT 2005 implicitly requires DOE to develop a test procedure.

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3.2.3 *Other Activities*

In addition to the requirements for DOE to issue standards and test procedures in accordance with NAECA, EPACT 1992, and EPACT 2005, there is an additional statutory requirement for DOE to respond to petitions. DOE must incorporate responses to petitions and any further actions that may be taken on petitions into its schedule of standards and test procedure rulemakings. Current petitions include the residential refrigeration petition and a petition from the State of California requesting an exemption from the residential clothes washers' energy conservation standard.

Ellipsoidal reflector / bulge reflector (ER/BR lamps) are in the coverage process, which will first require a Federal Register notice to establish a "household" definition. The Department will complete this work to establish the "household" definition because it will be needed for any future efforts to establish coverage for ER/BR lamps.

DOE has recently become concerned about manufacturers misapplying a test procedure or violating the spirit of a test procedure, if not a literal reading of the test procedure. If the spirit of a test procedure is violated on a wide scale, the benefits of an energy conservation standard could be significantly reduced. This raises the issue of anti-circumvention of DOE test procedures and standards. The Department plans to schedule time and resources to work on an anti-circumvention rulemaking.

One other area that requires significant attention and resources is the area of waivers and appeals. As new technologies are developed and products become more complex, existing standards and test procedures become more difficult to apply to those products. At an alarming rate, manufacturers are requesting waivers from test procedure requirements or are appealing the applicability of existing standards to their products. Handling these numerous complex challenges represents a significant challenge to the resources of the program.

4 Background on the Rulemaking Process

4.1 Rulemaking Process and Stakeholder Involvement

As prescribed by EPCA, energy efficiency standards are established by a three-phase public process: advance notice of proposed rulemaking (ANOPR), notice of proposed rulemaking (NOPR), and final rule. Following the guidance in the Process Rule (*Procedures for Consideration of New or Revised Energy Conservation Standards for Consumer Products*, 61 FR 36974 (July 15, 1996)), the Department actively encourages the participation and interaction of all stakeholders at all stages of the process. Early and frequent interactions among stakeholders have been useful for providing a balanced discussion of critical information required to conduct the analysis to support any standards.

Any new or amended standard must be designed to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A), 42 U.S.C. 6317(a)). To determine whether economic justification exists, EPCA (42 U.S.C. 6295(o)(2)(B)(i) and 42 U.S.C. 6316) directs that the Department determine that the benefits of the proposed standard exceed its burdens to the greatest extent practicable, weighing the following seven criteria:

1. The economic impact of the standard on the manufacturers and on the consumers of the products subject to such standard;
2. The savings in operating costs throughout the estimated average life of the covered product in the type (or class) compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered products which are likely to result from the imposition of the standard;
3. The total projected amount of energy savings likely to result directly from the imposition of the standard;
4. Any lessening of the utility or the performance of the covered products 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 conservation; and
7. Other factors the Secretary considers relevant.

To fully consider those seven criteria, DOE performs numerous analyses throughout the rulemaking process. Table 5 identifies which analyses address each of the factors named by EPCA, and whether DOE performs each analysis during the ANOPR or NOPR stage of the rulemaking. The sections below briefly describe each of these analyses.

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Table 5 Seven EPCA Criteria and Associated DOE Analyses

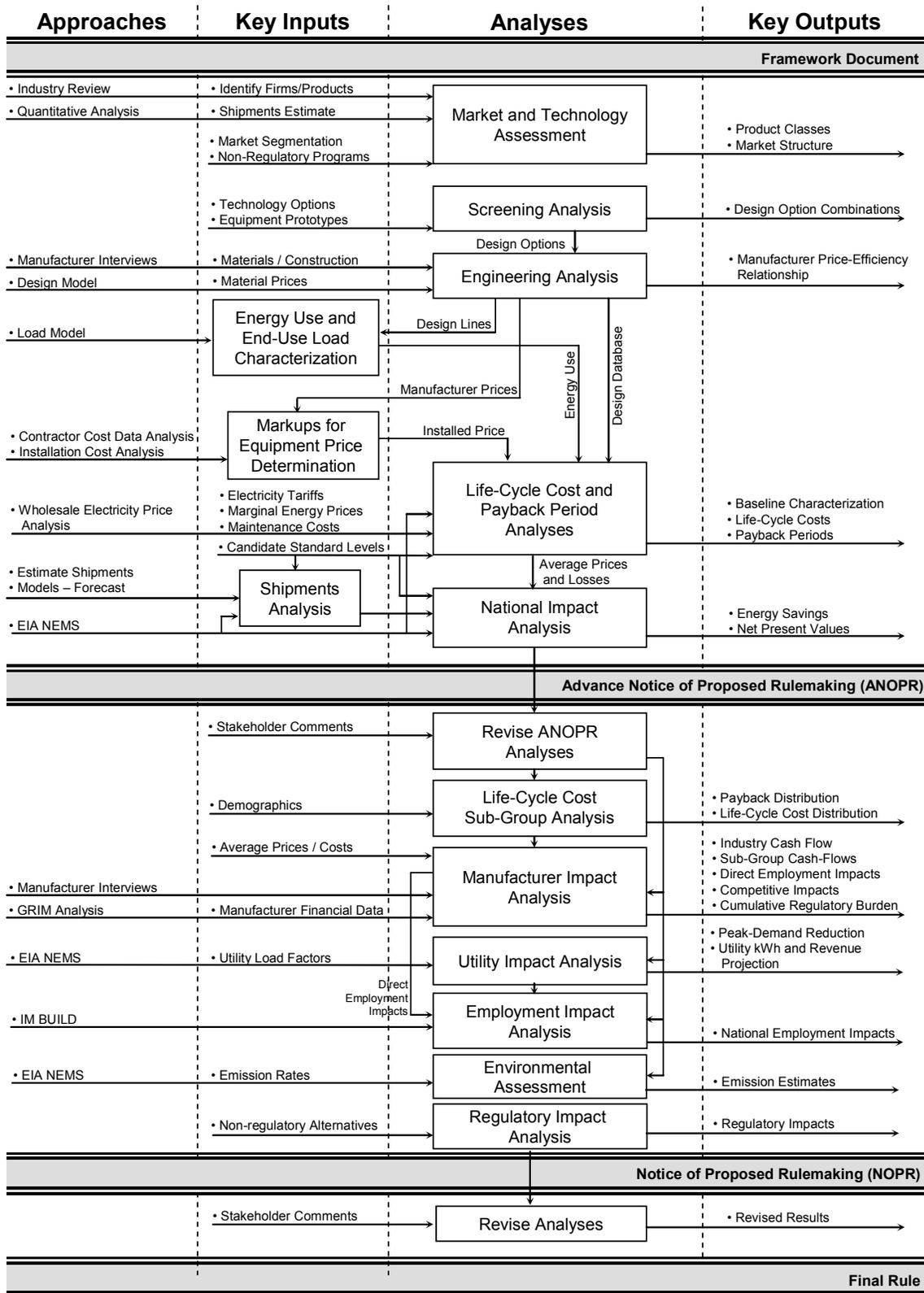
EPCA Criteria	Analysis DOE Performs to Address Factor	Rulemaking Stage
1. Economic impact of standard on consumers and manufacturers	Life-Cycle Cost (LCC) and Payback Analysis (including Markups)	ANOPR
	LCC Subgroup Analyses	NOPR
	Manufacturer Impact Analysis	NOPR
2. Lifetime operating cost savings resulting from standard	Life-Cycle Cost and Payback Analysis (including Markups)	ANOPR
3. Total projected energy savings resulting from standard	National Impact Analysis (including Shipments)	ANOPR
4. Impact of standard on utility or performance of products	Screening Analysis	ANOPR
	Engineering Analysis	ANOPR
5. Impact of any lessening of competition likely to result from standard	Manufacturer Impact Analysis	NOPR
6. Need for national energy conservation	National Impact Analysis (including Shipments)	ANOPR
7. Other factors the Secretary considers relevant	Environmental Assessment	NOPR
	Utility Impact Analysis	NOPR
	Employment Impact Analysis	NOPR
	Regulatory Impact Analysis	NOPR

The Department’s analysis in support of the development of new or amended standards is designed to identify the efficiency level that represents the maximum improvement in energy efficiency that is technologically feasible and economically justified on the basis of the seven statutory criteria. The Process Rule provides context to the seven criteria and helps guide the development of standards; all recent rulemakings have followed the requirements for developing efficiency standards, as described in the Process Rule.

In addition to ensuring that its analyses address the seven EPCA criteria and follow the Process Rule guidelines for developing regulations, the Department must follow numerous procedural requirements—mandated by various statutes and Executive Orders—and perform all associated supporting analysis. These requirements are integrated into the rulemaking process, analysis, and documents. How these requirements are carried out in the rulemaking process is further described below. Figure 1 summarizes the analytical framework for the Appliance Standards Program including approaches to the analysis, key inputs, major analysis sections, and outputs.

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Figure 1 Appliance Standards Rulemaking Flowchart for ANOPR, NOPR, and Final Rule



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4.1.1 Advance Notice of Proposed Rulemaking and Prior Activities

Framework Document and Workshop: At the very start of a new rulemaking, the Department convenes a public workshop to discuss and receive comments on issues it will address and the process it will follow in considering the adoption of energy conservation standards for the subject product. Approximately one month before the workshop, the Department makes available a framework document to explain and discuss the process, analyses, and issues concerning the development of such standards. For many of the issues and analyses, the framework document sets forth approaches that the Department is considering.

The major analytical activities conducted prior to the ANOPR are: a screening analysis, an engineering analysis, a life-cycle cost (LCC) and payback analysis, and a preliminary national impact analysis. Table 6 briefly describes each of these analyses, their importance to the rulemaking process, and the authority – statute, rule, and/or Executive Order (E.O.) – behind them.

The results of the analyses are made available on the Department's website for review and the Department considers comments on them. This review and comment process may result in revisions to the analyses. If appropriate, DOE conducts public meetings to enhance the exchange of information and comments. This analytical process culminates with the selection of candidate standard levels, if any, that will be considered for the NOPR. The ANOPR, which DOE publishes in the Federal Register, specifies the candidate standard levels that are chosen for further analysis, but does not propose a particular standard. The ANOPR also presents the results of the engineering analysis and the preliminary analyses of consumer life-cycle costs, national net present value, and national energy savings. The Department also makes available a technical support document (TSD) containing the details of all the analyses performed to this point.

The Department bases the selection of candidate standard levels on costs and benefits of design options or efficiency levels. It generally would not select as candidate standard levels any design options or efficiency levels that have payback periods that exceed the average life of the product, or that cause LCC increases relative to the base case.

As required by E.O. 12889, Implementation of the North American Free Trade Agreement, and as specified by the Process Rule, after publication of the ANOPR, there is a 75-day public comment period and DOE holds at least one public meeting. On the basis of comments received, DOE may revise the analysis or the candidate standard levels. If major changes are required, DOE gives stakeholders and technical experts an opportunity to review the revised analyses.

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Table 6 Pre-ANOPR and ANOPR Analyses

Analysis	Description	Statute/ Rule/ E.O Reference
Screening Analysis	As part of its initial analytical activities, DOE identifies the product design options or efficiency levels that will be analyzed in detail and those that can be eliminated from further consideration. This process includes a market and technology assessment, and consultations with stakeholders and independent technical experts who can assist with identifying the key issues and design options or efficiency levels to be considered. Screening factors described in the Process Rule elaborate on the statutory criteria and seek to eliminate problematic design options early in the rulemaking process. Under these guidelines, DOE eliminates from consideration design options that present unacceptable problems with respect to: technological feasibility; practicability to manufacture, install, and service; adverse impacts on equipment utility to consumers or availability; and adverse impacts on health or safety.	EPCA (Criterion 4) and 42 U.S.C. 6295 (o)(2)(A) Process Rule 1.d, 4.1, 5.b
Engineering Analysis	The technologically feasible design options or efficiency levels that are not eliminated in the screening process are considered further. The engineering analysis determines the maximum technologically feasible energy efficiency level among the technology options that remain after screening, and develops cost-efficiency relationships that show the manufacturers' cost of achieving increased efficiency. Based on the availability of data and analytical tools and public comments, DOE chooses the most appropriate means to establish the likely cost and performance improvement of each design option and the cost-efficiency curve.	EPCA (Criterion 4) and 42 U.S.C. 6295 (o)(2)(A) Process Rule 9.a, 9.b, 9.c
LCC and Payback Analysis	Because EPCA directs DOE to consider the economic impact of potential standards on consumers, the Department must determine changes in life-cycle costs to consumers that would likely result from a proposed standard. The Department performs an LCC and payback analysis to calculate the savings in operating costs throughout the estimated average life of the covered product compared to any increase in the price, initial charges, or maintenance expenses for the product likely to result directly from the imposition of the standard. To perform this analysis, DOE must also carry out a markup analysis to determine the markup and sales tax associated with converting the manufacturer price to a consumer price. Other necessary inputs for this analysis include baseline manufacturer process, installation costs, equipment energy consumption, energy prices and price trends, maintenance and repair costs, equipment lifetimes, and discount rates. DOE calculations of consumer impacts also include sensitivity analyses using high and low discount rates and high and low energy price forecasts.	EPCA (Criteria 1,2) Process Rule 4.d.7.iii
National Impacts Analysis	This analysis calculates the aggregate impacts of a standard at the national level, in terms of the net present value of total consumer LCC, national energy and water savings, and direct and indirect impacts on employment by appliance manufacturers, relevant service industries, energy suppliers, and the economy in general. To estimate the total energy savings resulting from a standard, the Department must first determine the shipments of the product (shipments analysis), as well as calculate the difference between the base case efficiency and the efficiency of each standards case, and forecast the effects of the standard on energy consumption.	EPCA (Criteria 3,6), Process Rule 4.d.7.vi

4.1.2 Notice of Proposed Rulemaking and Prior Activities

After the ANOPR, DOE conducts further economic impact analyses of the candidate standard levels. It refines the analyses it performed for the ANOPR, and also performs new analyses, including an LCC subgroup analysis, a manufacturer impact analysis, a utility impact analysis, an environmental assessment, an employment impact analysis, and a regulatory impact analysis. Finally, DOE performs a number of reviews of the rulemaking to comply with various Acts and Executive Orders. Table 7 briefly describes each of these analyses and reviews, their importance to the rulemaking process, and the authority – statute, rule, and/or executive order – behind them.

The results of all the analyses are made available on the Department's website for review, and the Department considers comments on them. This review and comment process may result in revisions to the analyses. If appropriate, DOE conducts public meetings to enhance the exchange of information and comments. This analytical process culminates with the selection of proposed standard levels, which are presented in the NOPR.

The NOPR, published in the Federal Register, documents the evaluation and selection of any proposed standards. For each product class, the Department also identifies the maximum improvement in energy efficiency or maximum reduction in energy use that is technologically feasible and, if the proposed standards would not achieve these levels, the Department identifies the reasons for proposing different standards. The NOPR also presents the results of all the analyses. The Department makes available a TSD containing the details of all the analyses. The Department considers many factors in selecting proposed standards. These factors include the selection policies established by statute and the many benefits, costs, and impacts of the standards shown by the analyses. Additionally, the Department encourages stakeholders to develop joint recommendations for standard levels (consensus standard proposals). If the Department receives a joint recommendation from a representative group of stakeholders, it strongly considers such a recommendation in the decision process to select the proposed standard level (Process Rule, 5.e.2 and 8.a).

As required by E.O. 12889 and as specified by the Process Rule, the publication of the NOPR is followed by a 75-day public comment period that includes at least one public meeting. On the basis of the public comments it receives, DOE reviews the proposed standard and impact analyses and makes modifications as necessary. If major changes to the analyses are required at this stage, DOE gives stakeholders and experts an opportunity to review the revised analyses.

Table 7 Pre-NOPR and NOPR Analyses

Analysis	Description	Reference
LCC Subgroup Analysis	DOE performs an LCC Subgroup Analysis to evaluate the impact of a standard—taking into consideration variations in household characteristics or location (e.g., energy prices, appliance use behavior, installation costs, heating or cooling degree days)—on identifiable groups of consumers, such as households of different income levels, which may be disproportionately affected by a national standard level.	Process Rule 1.f, II.d, 4.d.7.iii
Manufacturer Impact Analysis	DOE qualitatively and quantitatively assesses the impact of standards on manufacturers. The analysis includes impacts on industry NPV, with sensitivity analysis based on uncertain costs, prices, and sales volumes; estimated impacts on cash flow; impacts on revenue, net income, and return on equity; impacts on small manufacturers; impacts on manufacturers of multiple regulatory requirements; and impacts on manufacturing capacity, plant closures, and loss of capital investment.	EPCA (Criteria 1, 5), Process Rule 10.a-c Process Rule 4.d.7.ii and 10.f
Utility Impact Analysis	DOE estimates the effects of proposed standards on electric and gas utilities, including marginal impacts on their costs and revenues.	EPCA (Criterion 7), Process Rule 4.d.7.iv
Environmental Assessment	DOE estimates changes in emissions of carbon dioxide and the pollutants sulfur and nitrogen oxides. DOE establishes the results from this analysis for a set of trial standard levels. The results from these analyses factor into DOE’s selection of a proposed standard level.	EPCA (42 U.S.C. 6295 (o)(2)(B)(i)(VI), NEPA (42 U.S.C. 4321), EPCA (Criterion 7). Process Rule 4.d.7.vii
Employment Impact Analysis	DOE estimates the total impact on employment in different sectors of the economy and the net impact on jobs. It estimates the effects on employment for equipment manufacturers, relevant service industries, energy suppliers, and the economy in general.	EPCA (Criterion 7), Process Rule 4.d.7.vi
Regulatory Impact Analysis	DOE assesses the effects of other regulations that will take effect within three years of the effective date, to determine the cumulative regulatory burden on manufacturers. DOE also prepares a regulatory flexibility analysis unless it can certify that the rule will not have a significant economic impact on a significant number of small entities.	Process Rule 1.f and 10.g.2, E.O. 12866 Regulatory Flexibility Act (5 U.S.C. 601)
Federalism Review	DOE examines each proposed rule to ensure that it does not preempt State law and does not have a substantial direct effect 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.	E.O. 13132
Unfunded Mandates Review	DOE assesses the effects of each rule on State, local, and Tribal governments and the private sector. If the rulemaking is likely to impose expenditures of \$100 million or more, DOE publishes a written statement assessing the costs, benefits, and other effects of the rule on the national economy.	Unfunded Mandates Reform Act (Pub.L. 104-4), Title II
Family Policymaking Review	For any rule that may affect family well-being, DOE issues a Family Policymaking Assessment. (To date, this analysis has not been pertinent or applicable and has only required <u>pro forma</u> consideration.)	Treasury and General Gov. Appropriations Act of 1999 (Pub. L. 105-277), sec. 654
Energy Action Review	DOE prepares a statement of Energy Effects for the Office of Management and Budget, for any rule that is a “significant energy action” (i.e., would have a significant adverse effect on the supply, distribution, or use of energy).	E.O. 13211

4.1.3 *Notice of Final Rulemaking*

The final step in the rulemaking process is the publication of a final rule in the Federal Register. The final rule promulgates standard levels based on all of the analyses and explains the basis for the selection of those standards. It is accompanied by the final TSD.

4.1.4 *Procedural Requirements*

The regulatory requirements that must be met by DOE rulemakings include laws, regulations, and executive orders. In addition to the public comment requirements discussed in the following section 4.1.5, the Department must now respond to the following 13 requirements:

- A. Review Under Executive Order (hereafter “E.O.”) 12866, “Regulatory Planning and Review”
- B. Review Under the Regulatory Flexibility Act
- C. Review Under the Paperwork Reduction Act of 1995
- D. Review Under the National Environmental Policy Act of 1969
- E. Review Under E.O. 13132, “Federalism”
- F. Review Under E.O. 12988, “Civil Justice Reform”
- G. Review Under the Unfunded Mandates Reform Act of 1995
- H. Review Under the Treasury and General Government Appropriations Act of 1999
- I. Review Under E.O. 12630, “Governmental Actions and Interference with Constitutionally Protected Property Rights”
- J. Review Under the Treasury and General Government Appropriations Act, 2001
- K. Review Under E. O. 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use”
- L. Review Under section 32 of the Federal Energy Administration Act of 1974
- M. Congressional Notification

These 13 requirements are summarized in Table 8. Table 9 details how certain requirements are incorporated into the rulemaking process.

While a few of these requirements can be met by standardized responses, many of these requirements greatly add to the length of time necessary to complete the rulemaking process. Many of these requirements require preparation of additional analyses and/or review by other entities such as the Office of Management and Budget, Small Business Administration, Department of Justice, or Federal Trade Commission. Additional analyses or changes to the text may be required after receipt of comment by these agencies. The impact of these external review requirements alone (not counting the time required internally to meet these requirements or make revisions based on comments received) adds up to one year for a complete rulemaking from its initiation (e.g., framework document workshop) to the publication of the final rule.

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Table 8 Summary of Regulatory Procedural Requirements

Regulatory Procedural Requirements/Topics	Requirement
A. E.O. 12866: Regulatory Planning & Review	If determined that a rule is a “significant regulatory action,” the following analyses may be needed: national economic impact analyses, including benefits and costs likely to result from the proposed regulation, especially if \$100M or greater annual effect on economy. Also consider effects on: a sector of the economy, productivity, competition, jobs, environment, public health or safety, State, local or tribal governments or communities. Other analyses if relevant: whether inconsistent or would interfere with an action taken or planned by another agency; whether would alter the budgetary impact of entitlements, grants, user fees, etc.; whether raises novel legal or policy issues. “Plain language” requirement also still applies.
B. Regulatory Flexibility Act	Prepare regulatory flexibility analysis if a significant regulatory action will have a significant economic impact on a substantial number of small businesses.
C. Paperwork Reduction Act	Generally applies to all collection of information or data for rulemakings. Minimize paperwork burden on the public from collection of information for the Federal government; minimize Federal government cost of creation, collection, and use, of information; effectively use information technology; comply with laws concerning information privacy and confidentiality, security, and access; ensure integrity of the Federal statistical system.
D. National Environmental Policy Act of 1969	Environmental Assessment: include an analysis of environmental impacts for standards rulemakings; a categorical exclusion applies for test procedures.
E. E.O. 13132: Federalism	Whether regulation would preempt State or local government regulations; need to give notice to State and local governments as early as possible. (Applicable to new covered products rulemakings.)
F. E.O. 12988: Civil Justice Reform	General rulemaking drafting requirements to avoid burdening the Federal court system, e.g., eliminate drafting errors and ambiguity; write to minimize litigation; provide clear legal standard for requirements and promote simplification and burden reduction. Specific requirements: identify if will have preemptive effect, state effect on existing Federal law or regulation; state a clear legal standard; state if has retroactive effect; adequately define key terms; and follow any guidelines from the Attorney General on clarity and draftsmanship.
G. Unfunded Mandates Reform Act of 1995	Similar to E.O. 12866. Applies if regulation may result in expenditure by State, local, and tribal governments, in the aggregate, or by the private sector of \$100M or more in any one year. If applicable, follow DOE process for intergovernmental consultation. Prepare estimates of the costs, benefits and other effects on the national economy; permit input from State, local and tribal governments.
H. Treasury and General Government Appropriations Act of 1999	Generic requirement. Assess the impact of proposed regulation on family well-being.
I. E.O. 12630: Governmental Actions and Interference with Constitutionally Protected Property Rights (“Takings”)	Determine whether the proposed regulation would have a “taking” of private property effect, e.g., licensing, permitting or other conditions, requirements or limitations on private property use, affecting the value of private property, etc.
J. Treasury and General Government Appropriations Act of 2001 (Also known as the “Information Quality Act”)	Generic requirement. Follow OMB and DOE guidelines to maximize the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies. A regulatory action with a \$500M/year impact triggers peer review and applies to information disseminated after June 15, 2005.
K. E. O. 13211: Regulations That Significantly Affect Energy Supply, Distribution or Use	Utility impact analysis. Assess whether regulation would have a significant adverse effect on the supply, distribution, or use of energy.
L. Section 32 of the Federal Energy Administration Act of 1974	Applies to commercial standards and requires consultation with the Attorney General and Federal Trade Commission regarding the impact on competition.
M. Congressional Notification	Generic requirement. Report promulgation of final rules to Congress before effective date of rulemaking.

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Table 9 How Regulatory Procedural Requirements are Incorporated into Rulemaking

Regulatory Procedural Requirements/ Topics	Where Covered in Rule or Technical Support Document (TSD)	Coordination: Who, When?
*A. E.O. 12866: Regulatory Planning & Review [Also relevant to DOE Regulatory Agenda]	Regulatory impact analysis, goes in TSD	Yes, if DOE regulatory agenda published in final rule identifies rulemaking as a “significant regulatory action,” then draft rule goes to OMB/OIRA
*B. Regulatory Flexibility Act [Also relevant to DOE Regulatory Agenda]	Manufacturer impact analysis, including assessment of impact on small entities, goes in TSD	Yes, if impact on substantial number of small businesses, send regulatory flexibility analysis report to Chief Counsel for Advocacy to the Small Business Administration (SBA). Add/include summary of analysis in final rule.
*C. Paperwork Reduction Act	May apply under Methodology. Generic requirement that may concern all collection of information and data for the rule.	Coordinate with DOE Chief Information Officer and with General Counsel to determine if there are any new record-keeping requirements in proposed rule.
D. National Environmental Policy Act of 1969 (NEPA)	Environmental Analysis; Environmental Impacts [Environmental Assessment published with TSD]	Coordinate with DOE NEPA Compliance Officer. Environmental Assessment is required for standards; categorical exclusion applies to test procedures.
*E. E.O. 13132: Federalism	Authority section for covered products. Do Federalism summary impact statement for new covered products.	Yes, notice to State and local governments as early as possible.
F. E.O. 12988: Civil Justice Reform	N/A. (Generic requirement for drafting clarity.)	No.
*G. Unfunded Mandates Reform Act of 1995	National impact analysis	Yes, follow DOE process for intergovernmental consultation if rule may result in expenditure by State, local, and tribal governments, in the aggregate, or by the private sector of \$100 M in any one year.

* Indicates consultation with GC program counsel regarding this procedural requirement should occur early in development of a rule.

4.1.5 *Public Comment Requirements*

The rulemaking process incorporates several opportunities for public comment which contributes to the quality of the Department's analysis and decision-making, but substantially adds to the time needed to develop new and amended efficiency standards.

- The Administrative Procedure Act (5 USC § 553) requires general notice of a proposed rulemaking to be published in the Federal Register and the agency is required to give interested persons an opportunity to participate in the rulemaking through submission of written data, views or arguments with or without opportunity for oral presentation. Publication of the substantive rulemaking shall be made not less than 30 days before its effective date. Section 557 requires the public to be afforded "a reasonable opportunity" to submit comments.
- Executive Order 12889, "Implementation of the North American Free Trade Agreement," signed by President Clinton on December 27, 1993, requires publication of any "proposed Federal technical regulation...not less than 75 days before the comment due date," that is, a 75-day comment period. "Technical regulation" has been defined to include "characteristics or their related processes and production methods for a good...set out in a document, including applicable administrative, explanatory, and other related provisions, with which compliance is mandatory." (19 U.S.C. § 2576(b)(7))
- The Department's Process Rule specifies a 75-day public comment period with at least one public hearing or workshop for both ANOPRs and NOPRs. Appendix A to Subpart C of Part 430, 4.(c)(2) and (e)(2). However, in III.4.(d) of the preamble to the Process Rule, the Department also considered the importance of timely completion of rulemakings: "If experience demonstrates rulemakings are not being completed within a 3-year time frame using this new process, DOE will reconsider this process to explore how changes can be made to expedite the process."
- The Department's regulations for implementation of the National Environmental Policy Act (NEPA) require DOE to provide "the host state and host tribe with an opportunity to review and comment on any DOE Environmental Assessment (EA) prior to DOE's approval of the EA. DOE may also provide any other state or American Indian tribe with the same opportunity if, in the Department's judgment, the state or tribe may be affected by the proposed action. At DOE discretion, this review period shall be from 14 to 30 days. DOE shall consider all comments received from a state or tribe during the review period before approving or modifying the EA, as appropriate. If all states and tribes afforded this opportunity for pre-approval review waive such opportunity, or provide a response before the end of the comment period, DOE may proceed to approve or take other appropriate action on the EA before the end of the review period." 10 CFR 1021.301, Agency review and public participation. Public comment on the EA becomes problematical when DOE promulgates a direct final rule, since a direct final rule is intended to promulgate rules on an expedited basis and does not require a public comment period. However, the current DOE procedures for NEPA compliance do not mesh with the direct final rule

scenario, and so DOE may still be required to provide a NEPA public comment period.

4.2 Standards-Setting Decision-Making Process

Many aspects of the Process Rule have improved the Department's decision-making process. One key feature is the numerous opportunities for public consultation. The Process Rule rationale for increasing stakeholder input and expert review was to provide for greater and more productive interaction between the Department and interested parties throughout the process. The process was also designed to make the analyses more robust and transparent (e.g., fully describe the variability and uncertainty of impacts) to better inform the decision-making process. Finally, the Process Rule lays out policies to guide the Department's decision-making during critical stages of the rulemaking, including screening design options, selecting candidate standard levels, and selecting proposed and final standard levels.

4.2.1 Selection of Candidate Standard Levels

Based on the results of the engineering and cost and benefit analyses of design options, DOE identifies the candidate standard levels for further analysis. Candidate standard levels, which are identified in the ANOPR and on which DOE conducts impact analyses, typically include efficiency levels representing: (a) the most energy efficient combination of design options; (b) the combination of design options with the lowest life-cycle cost; and (c) a combination of design options with a payback period of not more than three years. Additionally, DOE may select candidate standard levels that incorporate noteworthy technologies or fill in large gaps between efficiency levels of other candidate standard levels (Process Rule 5(c)(3)).

4.2.2 Factors in Selection of Proposed Standard

Based on the results of the analysis of impacts, DOE selects a standard level to be proposed for public comment in the NOPR. This section describes the Department's policies concerning the selection of new or amended standards. These policies provide guidance for making the determinations required by section 325 of EPCA. These policies do not preclude consideration of any information pertinent to the statutory criteria; the Department considers all pertinent information in determining whether a new or amended standard is consistent with the statutory criteria. Moreover, the Department is not guided by a policy in this section if such a policy would lead to a result inconsistent with the criteria in section 325 of EPCA. The factors considered by DOE in its selection of proposed standard levels are described below.

Statutory policies. The fundamental policies concerning selection of standards are established in EPCA, including the following:

- (i) A candidate standard level will not be proposed or promulgated if the Department determines that it is not technologically feasible and economically justified. See 42 U.S.C. 6295(o)(3)(B). A standard level is economically justified if the benefits exceed the burdens. See 42 U.S.C. 6295(o)(2)(B)(i). A standard level is rebuttably presumed to be economically justified if the payback period is three years or less. See 42 U.S.C. 6295(o)(2)(B)(iii).
- (ii) If the Department determines that a standard level is likely to result in the unavailability of any covered product type with performance characteristics

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(including reliability), features, sizes, capacities, and volumes that are substantially the same as products generally available in the U.S. at the time, that standard level will not be proposed. See 42 U.S.C. 6295(o)(4).

(iii) If the Department determines that a standard level would not result in significant conservation of energy, that standard level will not be proposed. See 42 U.S.C. 6295(o)(3)(B).

(iv) The Department may not prescribe an amended standard which increases the maximum allowable energy use or decreases the minimum required energy efficiency. See 42 U.S.C. 6295(o)(1).

Consensus stakeholder recommendations. Development of consensus proposals for new or amended standards is an effective mechanism for balancing the economic, energy, and environmental interests affected by standards. Thus, notwithstanding any other policy on selection of proposed standards, a consensus recommendation on an updated efficiency level submitted by a group that represents all interested parties will be proposed by the Department if it is determined to meet the statutory criteria. (See Process Rule 8.a)

Along with consideration of statutory policies and consensus stakeholder recommendations, the following policies guide DOE application of the economic justification criterion in selecting a proposed standard (see Process Rule 5.e.3.i). These policies are stated as rebuttable presumptions. Although these presumptions reflect the great significance DOE attaches to these factors, DOE will consider evidence that rebuts an applicable presumption that a standard level is not economically justified.

A standard level will be presumed not to be economically justified (unless DOE determines that specific expected benefits of the standard would outweigh this and any other expected adverse effects) if DOE determines that a candidate standard level:

- Would result in a negative return on investment for the industry, would significantly reduce the value of the industry, or would cause significant adverse impacts to a significant subgroup of manufacturers (including small manufacturing businesses);
- Would be the direct cause of plant closures, significant losses in domestic manufacturer employment, or significant losses of capital investment by domestic manufacturers;
- Would have a significant adverse impact on the environment or energy security;
- Would not result in significant energy conservation relative to non-regulatory approaches;
- Is not consistent with the policies relating to practicability to manufacture, consumer utility, or safety;
- Would have payback periods that exceed the average life of the product or would cause life-cycle cost increases relative to the base case, using typical fuel costs, usage and discount rates; or
- Would have significant adverse impacts on a significant subgroup of consumers (including low-income consumers).

Finally, if the Department or the Department of Justice determines that a candidate standard level would have significant anticompetitive effects, that standard level will be presumed not to be economically justified unless DOE determines that specifically identified expected benefits of the standard would outweigh this and any other expected adverse effects.

4.2.3 Selection of a Final Standard

The Department considers any new information provided in the public comments on the NOPR, and any analysis by the Department of Justice concerning impacts on competition of the proposed standard, to determine whether any change to the proposed standard level is needed before proceeding to the final rule. The same policies used to select the proposed standard level, as described in section 4.2.2 above, are used to guide the selection of the final standard level.

4.3 Process Rule Timetable Targets

As stated in the preamble to the Process Rule, the intent of a rulemaking process is to produce standards that have sound analytical grounding and have been subject to thorough review and comment without making the process unduly time-consuming. 61 FR 36977 (July 15, 1996). The Process Rule states that the entire rulemaking, which starts with the issuance of DOE priorities and ends with publication of a final rule, should last no more than three years. In addition, the time required from issuance of an ANOPR to issuance of a final rule should be no more than 18 months. Issuing the ANOPR takes 50 percent of the rulemaking timetable – the analysis is front-loaded and structured in this way in hopes of encouraging joint stakeholder recommendations.

5 Reasons for the Delays in Issuing Rules

The Department has accumulated a large backlog of rulemakings that failed to meet statutory deadlines. Rulemaking delays have plagued the Appliance Standards Program since its inception. When the Department attempted to accelerate its rulemaking pace in the early 1990s, the Department's decision-making and supporting analyses were questioned and Congress imposed a one-year moratorium on the issuance of new or amended standards. During that year, the Department worked with stakeholders to re-invent the standards rulemaking process. One result of this re-invention was the establishment of an annual priority-setting process, during which the Department determined, based on analyses of likely impacts and input from stakeholders, which products' efficiency standards rulemakings would receive staff and contractor resources, and which products' rulemakings would not. Despite much-improved analysis and notable success in spurring consensus standards and completing a number of rulemakings, the Department has been unable to complete its priority rulemakings within the three-year time frame identified in the Process Rule.

The Department has identified several causes for its inability to accelerate the rulemaking pace and reduce the standards backlog. These causes are discussed in this section, while section 6 will discuss solutions to problems outlined here. The Process Rule (which can be credited with improved stakeholder participation, better analysis, and consensus agreements) also had less desirable consequences. The priority-setting process from the Process Rule placed an increased emphasis on energy savings and a reduced focus on statutory deadlines. For instance, through priority-setting, the Department completed the second rulemaking cycle for residential clothes washers before initiating the first cycle of rulemakings for products with lower energy savings potential, such as pool heaters and direct heating equipment. As discussed in section 2 of this report, the priority-setting process assigned products with low potential energy savings a low priority. It was understood by all stakeholders that diverting resources away from low-priority products and toward medium- and high-priority products was an intentional consequence of the Process Rule.

The open nature of the new process has also inadvertently introduced delays in the rulemaking schedules as the Department's policy of sharing draft analysis and accepting stakeholder comments on an ongoing basis has resulted in an inefficient and disruptive reanalysis and decision-making process. Also, many aspects of the Process Rule which made the rulemaking analyses more robust have also made them more voluminous, complex, and time-consuming.

Finally, as described below, there are serious deficiencies in the review and concurrence process. This process will be reformed to make it clearer, more certain and timely.

5.1 History of Rulemaking Scheduling

As previously described, NAECA, NAECA 1988 and EPACT 1992 established minimum efficiency standards and set a timetable for one or two updates to these standards. Typically,

DOE was charged to update each standard at three-to-eight-year intervals, depending on the appliance.

Almost immediately, DOE was unable to meet the schedule outlined by Congress. Early deadlines to revise standards for refrigerator-freezers and to establish entirely new standards for small furnaces by January 1, 1989, were not met. These initial delays led to a cascade of delays in updating later standards. By 1994, DOE had updated the standards for refrigerators, refrigerator-freezers, freezers, clothes washers, clothes dryers and dishwashers, and set initial standards for small gas furnaces, but continued to fall behind the rigorous schedule set by Congress. With the addition of commercial products from EPACT 1992, DOE's problems were only exacerbated.

Beginning to address the backlog, DOE proposed standards for eight products in late 1994 (originally due in 1992). The proposed standards were met with intense opposition from industry, with DOE receiving over 5,000 responses during the comment period. After evaluating the comments, DOE acknowledged that portions of the proposal were problematic and withdrew the proposal for further review. Concerns over the process led Congress in 1995 to place a one-year moratorium on proposing or issuing energy conservation appliance standards. During that year, the Department undertook a process improvement effort, which led to revised policies and procedures for setting appliance energy efficiency standards. These policies and procedures addressed the stakeholders' key concerns about the rulemaking process:

- DOE's decision-making process was not transparent and not understandable;
- DOE failed to adequately consult with stakeholders during the standards-setting process, especially at the beginning and during the analytic phases;
- DOE did not adequately consider alternatives to rulemaking;
- DOE's analysis relied on computer models that few people understood;
- DOE failed to consider the effects of standards on small- and medium-size manufacturers and the cumulative effects of multiple standards on manufacturers that produce several covered products;
- DOE emphasized "maximum technology," basing standards on prototypes and unproven technologies with disregard to practicability; and
- DOE failed to consider plant closure and loss of jobs, the restriction of consumer choice, the adequacy of the market forces, the impact on low-income households and fuel switching.

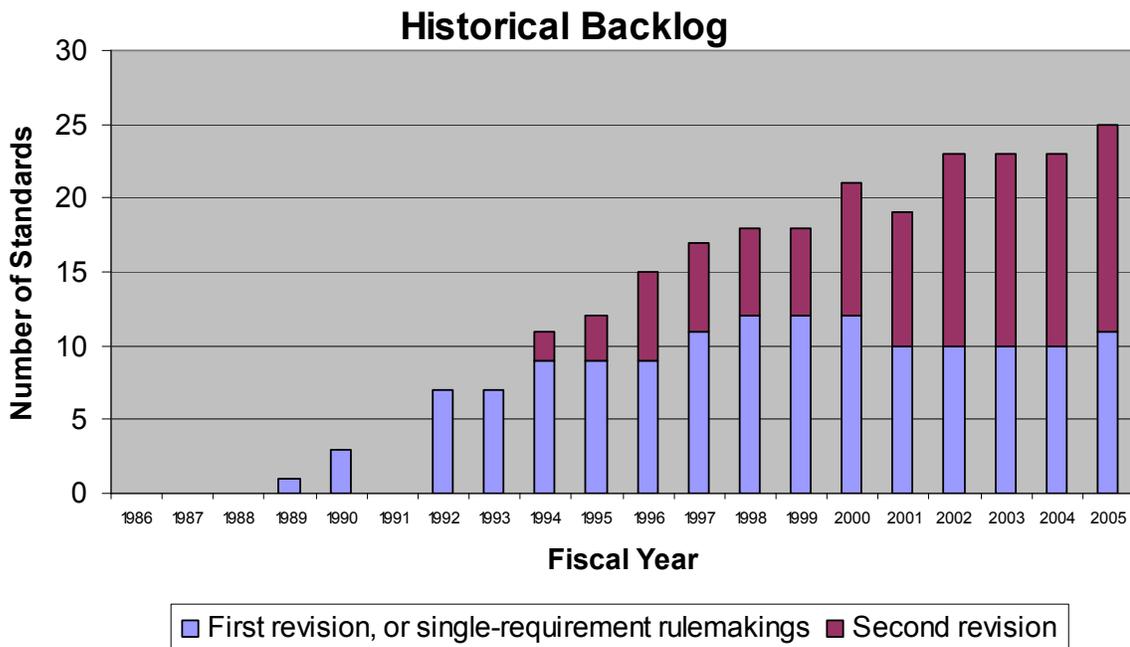
These new policies were supported by stakeholders. The most important element of the process is the level at which it involves stakeholders. In the previous paradigm, DOE developed standards with limited consultation. As a result, DOE had to defend its decisions and often to revisit and revise its analysis. The new process involves stakeholders from the start, and by the time DOE publishes a notice of a proposed rule, the key issues are well understood and considered.

Stakeholders are now active participants in the development of the analysis. Unfortunately, while this collaboration and continuous review of the analysis with a broad array of

stakeholders greatly improved the analysis and the Department’s decision-making, it added delays and complicated efforts to reduce the backlog of rulemakings.

Figure 2 illustrates how this backlog has accumulated over the years, distinguishing between first revisions to statutorily prescribed standards (also including those products for which only one DOE standards rulemaking is required) and second revisions. By 1997, the Department had already missed 17 statutorily established deadlines. In 2005, there were 25 standards in the backlog.

Figure 2 Growing Backlog with the Appliance Standard Program



5.2 Consequences of the Process Rule

5.2.1 Prioritization Process

During the 1995 process improvement outreach, stakeholders expressed the desire to have the Department prioritize rulemakings based on input from the public and clearly established criteria. Stakeholders were concerned that the Department was critically behind schedule in its statutory requirements and could not achieve the original rulemaking timetable set by legislation. Prioritization of future rulemakings was emphasized as a fundamental means of improving the efficacy of the Appliance Standards Program. Setting some products’ standards rulemakings at low priority, and diverting staff and contractor resources toward medium- and high-priority rulemakings, were intentional consequences of the Process Rule.

Prioritization of rulemakings also offered a means to avoid prolonged debate concerning the quantification and meaning of “significant energy savings.” EPCA instructs DOE not to issue standards for a type or class of covered product if the Secretary determines by rule that the establishment of such standards will not result in “significant” conservation of energy.

(42 U.S.C. 6295(o)(3)(B)) The issue of significance of energy savings was very controversial. Many participants in the rulemaking process claimed that the savings were becoming insignificant because of decreasing marginal benefits, while others claimed that the savings were significant. The prioritization process for DOE's rulemaking was seen as a means to enable the Department to focus on products that all stakeholders could agree held the most energy-savings potential.

The Department agreed that focusing attention on the high priority rulemakings, rather than trying to address all required rulemakings at once, would be more productive. DOE identified the development of the Administration's Semi-Annual Regulatory Agenda, as the appropriate time for significant stakeholder input into priority setting. Prioritization of rulemakings was a major element in the Department's Process Improvement Plan. The specific factors the Department adopted to develop priorities and establish schedules for conducting rulemakings include:

- (i) Potential energy savings;
- (ii) Potential economic benefits;
- (iii) Potential environmental or energy security benefits;
- (iv) Applicable deadlines for rulemakings;
- (v) Incremental DOE resources required to complete the rulemaking process;
- (vi) Other relevant regulatory actions affecting products;
- (vii) Stakeholder recommendations;
- (viii) Evidence of energy efficiency gains in the market absent new or revised standards;
- (ix) Status of required changes to test procedures; and
- (x) Other relevant factors. [Process Rule at 3.(d)]

Following the publication of the Process Rule, once a year, the Department prepared an analysis of each of the factors identified above. The results of this analysis were used to develop the rulemaking priorities and proposed schedules. The DOE analysis, priorities and proposed rulemaking schedules were documented and distributed for review and comment. Following public review and comment, each fall, the Department issued, simultaneously with the issuance of the Administration's Semi-Annual Regulatory Agenda, a final set of rulemaking priorities, the accompanying analysis, and the schedules for all priority rulemakings that it anticipated within the following two years.

A significant consequence of the priority-setting process was an increased emphasis on energy savings and a reduced focus on statutory deadlines. This increased emphasis was a direct reflection of the stakeholder recommendations that the Department received during the annual priority-setting process. Focusing resources on high-energy-saving products resulted in postponing work on some products with low-energy-savings potential even if these products had an earlier statutory deadline. For example, the Department, on the suggestion of stakeholders, elected to complete a second revision of clothes washer standards before initiating a first revision of standards for pool heaters and direct heating equipment. Such prioritization decisions were an intentional consequence of the Process Rule. As depicted in

Figure 2, a substantial increase in the backlog occurred during and after the process improvement exercise, which began in 1995.

The Process Rule also contributed to statutory delays because it “unbundled” low energy savings potential products from related appliances. The priority-setting process was conducted on a product-by-product basis and therefore high-priority rulemakings were established for single rather than bundled products. For example, the first revision of clothes washer standards was conducted in a rulemaking that included clothes dryers and dishwashers. This product grouping was referred to as the “clean three” rulemaking. In contrast, the second revision to the clothes washer standard was conducted as a single-product rulemaking.

5.2.2 Stakeholder Input and Expert Review

The Process Rule established the conditions for increased stakeholder input into the rulemaking process, and increased opportunities for expert review. These changes have had beneficial impacts, but have also had negative, unintended consequences.

Throughout the rulemaking process, the Department provides interested parties with opportunities to provide data, recommendations and other comments. DOE shares with the public both detailed analytical methodologies and analyses to inform interested parties as to the progress of standards development. The results of all analyses are distributed for review to experts and interested parties and, when appropriate, a public meeting or webcast is conducted to review the analytical models and results. This information from the Department enables its stakeholders to provide informed input to DOE at each step of the process.

Stakeholder input has contributed significantly to the quality of the Department’s analyses and improved the Department’s decision-making. For instance, with input from interested parties, potential issues are identified early as are the types of specialized expertise that may be required to conduct the analysis. With these inputs, DOE selects appropriate approaches and data sources to perform the engineering and economic analyses.

Engaging stakeholders early and often in the rulemaking process also has the very large benefit of stimulating the development of joint stakeholder recommendations. The development of joint stakeholder recommendations for new or amended standards is an effective mechanism for balancing the economic, energy, and environmental interests affected by standards. As stated in the Process Rule, notwithstanding any other policy on the selection of proposed standards, a consensus recommendation by a group that represents all interested parties will also be proposed by the Department if the Department finds that it meets the statutory criteria. Consensus stakeholder recommendations formed the basis of the most recent standards adopted for residential refrigerators, fluorescent lamp ballasts, and residential clothes washers. With respect to commercial air conditioners, the Department’s analysis provided a foundation for a consensus that was included in EPACK 2005.

However, the open nature of the process has also inadvertently introduced delays in the rulemaking schedules. Such delays have been an unintended consequence of the Process Rule. The Department’s policy of sharing draft analyses and accepting stakeholder

comments on an ongoing basis has resulted in an inefficient and disruptive reanalysis and decision-making process. For example, the Department has shared analytical results and held public meetings on an engineering analysis and a life-cycle cost analysis well before the remainder of the ANOPR analysis was completed. As a result, stakeholders have frequently insisted on immediate changes to the analysis, although these could have been addressed more efficiently after the ANOPR. Open decision-making also creates the opportunity for stakeholder intervention in the policy process which can result in decisions being delayed or overturned. In Appendix A, the Department explains the causes for the delays in issuing the three highest-priority standards which were announced in the December 2004 regulatory agenda. As described, the experience with the Furnace and Boiler and Commercial Unitary Air Conditioner Rulemakings emphasizes the need to better integrate stakeholder input and expert review within the scope of the structured notice and comment rulemaking process.

5.2.3 Complexity of Analysis

The development of energy efficiency standards requires complex, time-consuming, and detailed analyses. These analyses are needed to address the criteria laid out by EPCA and other statutory and regulatory procedures. Section 4 of this report described the seven EPCA criteria that must be considered in standards rulemakings and the additional regulatory procedural requirements. For example, Environmental Assessments are required on all standards rulemakings. Furthermore, even in consensus rulemakings in which stakeholders come together and negotiate a standard acceptable to all, DOE must still perform extensive analyses to establish that the jointly recommended standard meets the EPCA criteria for technological feasibility and economic justification, as well as all regulatory procedural requirements.

The Process Rule has unintentionally increased the complexity of the analysis conducted in support of energy efficiency standards rulemakings. Many aspects of the Process Rule, which made the rulemaking analyses more robust, have also made it more voluminous, complex, and time-consuming. In addition to characterizing the aggregate costs and benefits of standards as had been the practice before process improvement, the Department now seeks to understand the distribution of those costs and benefits among consumers, manufacturers and other groups. Additionally, the Process Rule requires that the analysis describe the uncertainty associated with these analyses of costs and benefits, so that any adverse impacts, including those on significant subgroups, will be fully considered in selecting a standard.

Greater complexity and more exhaustive analysis can consume considerable analytical resources without improving the standards-setting process and can contribute to rulemaking delays in several ways. Performing an engineering analysis on 13 basic product models is more time consuming than performing a single engineering analysis. Similarly, performing a regional life-cycle cost analysis for eight climate zones will be more difficult than calculating national average impacts. Thus, structuring the analytical blueprint for a rulemaking's analysis consists of carefully considering what information will improve decision-making, knowing what data exist to support this analysis and informing all stakeholders of the relative merits of alternative approaches to conducting the analysis. In order to avoid unnecessary analysis, the Department needs to engage stakeholders in a dialogue that might reduce the analytical burden without sacrificing the quality of the analysis.

Complexity also contributes to increasing internal and external review times. As the analysis has gotten more complex, the economic models and Technical Support Documents have become larger and more difficult to review. The review function is repeated many times, first by the analysis team, then by program management, other DOE offices and finally by the public. A key goal of the Process Rule was to make the analysis transparent and accessible for all to understand and participate in the rulemaking process. Unnecessary complexity runs counter to this goal and has been an unintended consequence of the Process Rule. In Appendix A, the Department explains how analytical complexity was a major cause for the delays in issuing the standards for distribution transformers.

5.3 Rulemaking Process

As presented in section 4, the rulemaking process is both complex and rigid in its structure and requirements. The many overlapping requirements from EPCA, executive orders and the Process Rule pose a complex analytical and procedural challenge. The process is sequential, incorporates internal and external reviews, and consists of an analytical body that builds on preceding analysis. Any delay in performing a rulemaking task is likely to cascade into a delay on the entire rulemaking schedule.

The overall rulemaking process is made up of required sequential stages of rulemakings which control the basic rulemaking timeline. Standards rulemakings progress from publication of ANOPRs and NOPRs to final rules. Of the approximately three years needed to conduct a rulemaking there are multiple requirements for inter-agency review periods and public comment periods which together add up to approximately one year. This one-year period does not include review times within DOE.

While DOE has tried to meld the various statutory and regulatory requirements into the analysis steps, many analytical tasks are sequential, (i.e., some analyses are derived from other analyses that must be completed first). Most tasks cannot be done concurrently, since progress on the timeline is constrained by completion of many sequential tasks and review and comment stages. This sequence-dependent nature of the analyses makes it vulnerable to un-recoverable delays.

5.4 Document Development, Review and Clearance Process

The rulemaking schedule includes multiple internal review, edit, and revision requirements. These internal reviews are performed by various levels of management within the following offices: the Building Technologies Program, the Office of the Assistant Secretary for Energy Efficiency and Renewable Energy, the Office of Policy and International Affairs (PI), the Office of General Counsel (GC), and the Secretary. The time consumed for these reviews, the resulting revisions and the final concurrence (clearance) process represent a significant portion of the rulemaking schedule. A coordinated and timely completion of reviews is essential. While there are also reviews by external entities such as OMB, DOJ, SBA, and other stakeholders, the past delays have occurred internally within the Department.

Records of past and current rulemakings provide insight into areas of the concurrence process that demand improvement. While many topic areas and process steps can be

identified as part of the problem, the following areas relate directly to the improvements in inter-office coordination and the review/concurrence process that are presented in section 6.

5.4.1 Document Quality

The Appliance Standards Program staff and support contractors have not consistently submitted high-quality documents into the review process. The layout, structure, content, writing styles and terminology have been inconsistent from rulemaking to rulemaking, and sometimes within the same rulemaking. Documents circulated for review, especially early in the process, have sometimes not been written clearly and have contained numerous grammatical and typographical errors. These document quality problems have complicated and delayed the review process in many different ways. They have made document review more time-consuming and difficult, and blurred the responsibilities of different reviewers. In addition, unsynchronized and often delayed responses from reviewers, conflicting edits among reviewers, and even sequential edits from single reviewers have contributed to major delays and frustrations.

In summary, the Appliance Standards Program needs to improve its document quality to such a level that other reviewing offices can focus on the issues for which they are primarily responsible during review and concurrence. Reviewers need to focus their reviews on the issues for which they are responsible so that they can provide comments expeditiously.

5.4.2 Issue Resolution

The early identification and resolution of a broad range of technical, legal, and policy issues is necessary for the required analyses to be undertaken and completed expeditiously and for rulemaking documents to be drafted. Persons knowledgeable of product-specific issues, stakeholder views and concerns, legal requirements and constraints, other related rulemakings, and relevant policy guidance are all essential participants in this process. When this process has not been managed effectively, it has led to multiple changes in the content of key analyses and the framework of rulemaking processes and documents, and major delays in the issuance of required efficiency standards.

Currently, there is an informal process in place for the program, GC, and PI to follow to resolve key rulemaking issues. Staff from each of the program offices participates in individual product rulemaking team meetings on an ad hoc basis, addressing crosscutting issues as they arise. This informal process is driven by the individual standards development product teams and is not uniformly applied across all rulemaking teams. Additionally, GC and PI involvement is infrequently solicited at the program level. Issues bearing on analysis have not surfaced as soon as might occur under a more formal process of inter-office interaction. Consequently, the program has not consistently received the benefit of GC's and PI's guidance in the early rulemaking stages. Conversely, GC and PI have not consistently been made aware of issues that might contribute to a better understanding of the rulemaking analysis. Analysis efforts could be reduced or redirected earlier if GC and PI involvement, input, and guidance were to be received on a formal, regular basis for each rulemaking. Similarly, regular GC and PI guidance is needed at the program level on issues spanning multiple rulemakings.

5.4.3 Senior Review and Clearance Process

The difficulty of obtaining timely review and feedback from senior reviewers (i.e., EE-1, GC-1, PI-1, and S-3 and their immediate staffs) has also contributed to past delays. The key DOE staff involved with appliance standards rulemakings report through different reporting channels. As a result, staff in different offices often has different knowledge of past decisions and events, different perspectives, and different priorities in mind during document reviews. It has become difficult for the program to efficiently consider and respond to feedback from the various offices when it is provided in an unsynchronized fashion. Ideally, through regular communication, most issues should be resolved long before the final clearance process. In cases where policy or legal issues remain at the start of mandatory concurrence, there must be a mechanism for quickly elevating and resolving them.

The clearance process involves multiple management levels within multiple offices (GC, PI, and EE). As a result of sequential document reviews flowing up and down multiple review channels, there are literally dozens of potential points of communication failure. Presently there exists no structured process to facilitate communication across concurrence levels and program offices. Final review and clearance by the senior concurrence group needs to be a coordinated event to more effectively manage the sequential nature of mandatory concurrence.

As described above, deficiencies in the review and concurrence process are significant and the process must be reformed.

5.5 Delays of Priority Rules – 2004

The Conference Report accompanying the Fiscal Year 2006 Energy and Water Development Appropriations Act includes a requirement for an Appliance Standards Program report. The conference report calls for an explanation for the additional delays announced in December 2004 for issuing the three highest-priority standards. This section provides an overview of the scheduling changes and their causes. A more detailed explanation is presented in Appendix A.

In December 2003, the Department published a regulatory agenda (68 FR 72467 (December 22, 2003)) giving publication dates for the ANOPR, NOPR, and final rule for each of the three priority products (i.e., distribution transformers, commercial unitary air conditioning and residential furnaces and boilers). In December 2004, the Department revised the publication dates in the regulatory agenda, reporting the ANOPR publication date of July 29, 2004, for each of the three priority rules and revised the publication dates for the NOPRs and final rules for the reasons described below. 69 FR 72712 (December 13, 2004).

Between publication of the December 2003 and 2004 regulatory agendas, the time period between the ANOPR and NOPR increased from 12 months to between 23 and 26 months for the three rules. Similarly, the time between the NOPR and the final rule increased from between six and eight months to 12 months. The earlier schedules were consistent with the Process Rule's stated goal of 18 months from ANOPR to final rule. These earlier schedules had allocated three to four weeks for program review and six weeks for mandatory concurrence prior to the publication of rulemaking notices. When preparing the December

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2004 Semi-Annual Regulatory Agenda, DOE realized that the time required for review and concurrence was approximately sixteen months.

The December 2004 schedules allowed for more time for reviews and planned for the OMB-required peer review. Appendix A of this report further explains the reasons for the delays announced in the December 2004 Regulatory Agenda and provides an illustration of how analytical complexity, stakeholder input, and internal review requirements can extend the rulemaking timetable.

The Department will issue proposed rules for residential furnaces and electric distribution transformers in fiscal year 2006. Furthermore, by implementing the recent and forthcoming process improvements, the Department expects to publish the final rules for these products months ahead of the September 2007 date announced in the December 2004 Semi-Annual Regulatory Agenda.

As to the commercial unitary air conditioner rulemaking, the Department was preparing publication of a direct final rule when EPCACT 2005 was enacted obviating the need for a rule.

6 Plan to Expedite Rulemaking

The previous section of this report identified the root causes of the rulemaking delays experienced by the Appliance Standards Program. This section describes the Department's recent and forthcoming process improvements which will address the problems previously identified. These process improvements will increase the program's rulemaking output by increasing the number of products in the active rulemaking process and by shortening the time to complete successive rulemakings.

6.1 Rulemaking Process Efficiency Enhancements

Priority setting has been the Department's methodology for addressing the statutory requirements for the Department's energy efficiency standards rulemakings. However, those requirements have for some time outrun the means available to the Department to achieve them. In order to address the current backlog of rulemakings and the new requirements of EPACT 2005, the Department must improve the process by which rulemakings are conducted.

A lesson learned from the past is that starting multiple major projects at the same time leads to unmanageable simultaneous resource requirements. Similar to measures taken by electric utility companies, the Appliance Standards Program must reduce "peak load" levels and "valley fill" times of reduced demand in order to gain efficiency and reduce risk. This is especially important in the quality-control-review of items such as the technical support documents that typically include several hundreds of pages of highly technical narrative, tables and charts. Staggered rulemakings and valley-filling techniques are key components of the Department's plan to improve rulemaking efficiency.

Another method to increase the number of standards developed concurrently is "bundling" related products into a single rulemaking. Product bundling offers economies of scale that will allow the Department to address the backlog of products without neglecting those products with the greatest energy savings potential.

6.1.1 Staggered Rulemakings

The rulemaking process is by necessity highly sequential, with alternating periods of analysis, internal and external review, and public comment periods. It can be difficult to effectively manage human resources, particularly when rulemakings are in near-sync. This means that contractor resource requirements alternate between periods of high and reduced activity. Similarly, technical reviews by DOE management of multiple 1000-page documents can occur simultaneously. The Department will stagger rulemakings whenever possible so that analysis and reviews of different rules do not occur concurrently.

6.1.2 "Valley Filling" Management Techniques

Valley-filling is a management technique to ensure that when a rulemaking team faces a break in the analysis on one rule (Rule A) that it can re-focus its efforts to another rule (Rule B). For purposes of the ensuing discussion, Rule A is started first and Rule B is an "early-start valley-filling" rule because it begins prior to the date that it would begin if the rulemakings were still conducted sequentially. Breaks in the analysis include

internal/external reviews, mandatory concurrence, and comment periods. DOE will take the valley-filling opportunities so that rulemaking teams can get an early start on Rule B in preparation for its ANOPR. The net effect of this early start will be that only 27 months will elapse between publication of final rules A and B, for a given rulemaking team.

Valley-filling will contribute to accelerating the standards process. For example, the first formal step in the rulemaking process is the preparation and publication of the framework document for stakeholder review and comment. The framework document essentially lays out the preliminary analytic plans for the rulemaking (e.g., what analytic tools DOE plans to use for the rulemaking, such as reverse engineering analysis or tear-downs). An outcome of Rule B's early start will be to hold the framework workshop for Rule B during the comment period following Rule A's ANOPR. Another outcome of Rule B's early start will be that once the NOPR for Rule A goes into mandatory concurrence, the analysis in support of Rule B's ANOPR will begin. The overall result of valley-filling will be to issue Rule B's ANOPR within nine months of Rule A's final rule, and then maintain the 18-month timetable between Rule B's ANOPR and final rule. As indicated above, this means that only 27 months will elapse between publication of final rules A and B, for a given rulemaking team.

Valley-filling combines a 36-month rulemaking, Rule A, with an overlapping rulemaking, Rule B. Because of the overlap, the total time to complete both rules is reduced to 63 months compared to the 72 months that would be needed to complete the two rules sequentially. This overlap means that a rulemaking team utilizing valley-filling techniques could issue a final rule (on average) every 31.5 months.

The Department also notes that valley-filling is a risk management strategy, where each team is working on a portfolio of rulemakings. Since the Department believes that there is no slack to be removed from the 36-month rulemaking timetable, valley-filling will be used to, in effect, parallel a team's rulemaking activities. As unforeseen circumstances arise, the team can switch seamlessly back and forth between work on Rules A and B. This enhances team utilization and efficiency and will result in a higher number of final rules per year.

6.1.3 Bundled Product Rulemakings

Initially, in carrying out the appliance standards rulemaking requirements of the Energy Policy and Conservation Act, the Department conducted rulemakings in which a number of products were included in a single rulemaking. For example, the initial rulemaking included nine different products. Later rulemakings dealt with a single product category. For example, the three recent priority rulemakings each deal with a single product. In both instances (i.e., multiple products and single product rulemakings), a DOE staff member was assigned the responsibility to manage a single rulemaking. However, experience has shown the level of DOE activity is not proportional to the number of products in a given rulemaking. That is, managing a rulemaking with two products is not twice the work of a rulemaking with a single product.

There are potentially significant economies of scale with bundling rulemakings, but care must be given as to how the rulemakings are bundled. For example, in the "clean-three" (clothes washers, clothes dryers and dishwashers) rulemaking, the manufacturers, for the most part, were the same for each of the three products. DOE was able to efficiently and

effectively coordinate contractor activities and the contacts with the affected industries. Often, DOE staff and contractors would work with the same manufacturer representatives for each of the “clean-three” manufacturers. This resulted in significant rulemaking economies that contributed to an accelerated analysis process. Similarly, DOE staff was able to efficiently bundle the Federal Register drafting and reviewing activities for these “bundled” rulemakings.

However, there have been some rulemakings where bundling has not contributed to contractor and staff effectiveness. For example, in the mid-1990s, DOE bundled a number of unrelated products into a single rulemaking, e.g., fluorescent lamp ballasts, television sets and furnaces, where the rulemaking was delayed and drawn out.

As part of the multi-year schedule-setting, DOE has identified bundling opportunities that will result in efficiency gains (section 7). A number of factors were considered as part of the bundling, such as the industry affected or the technologies to be considered. As discussed above, DOE considered bundling where there is significant overlap in the manufacturers that produce the given products as was the case with the “clean-three” rulemaking. In addition, the Department considered bundling where the technologies and issues are related. For example, water heaters, pool heaters, and direct heating equipment are good candidates for bundling since many of the technical issues are similar. Similarly, a number of lighting technologies can be treated together in a single future rulemaking. In this fashion, the analysis will be simplified by virtue of analyzing a single market, with a team of lighting experts who routinely consider multiple lighting technologies. A single trade association may cover all the products, and many of the same manufacturers can review the analysis and attend a single public meeting. From the perspective of DOE resources, a single project manager can oversee the rulemaking activities. From a review perspective, there are significant time-savings in treating many products in a single document.

6.2 Stakeholder Input and Expert Review

6.2.1 Lock-Down of Analysis Following the Close of Formal Comment Periods

In order to maintain the benefits of stakeholder participation without introducing delays to the rulemaking schedule, the Department needs to adopt a new approach for incorporating stakeholder comments and supporting consensus efforts. The Department needs to maintain greater discipline in “locking down” the analysis following the close of formal comment periods. Comments received past these dates will be considered during the next scheduled reanalysis.

6.3 Complexity of Analysis

6.3.1 Analytical Plans for Each Rulemaking

As described in section 4, the analysis needed to develop new or amended standards is very comprehensive and complex. In the past, individual rulemaking project teams worked independently and primarily communicated through deliverable documents. It was not unusual for management to review a document and direct the team to take a different approach and redo the document. The analytical plans were developed to raise issues and decision points before actions were taken and analysis was performed. One particular

challenge of the past was the tendency to investigate in detail any issue that was raised by stakeholders or of interest to the expert doing the analysis. The Department will now investigate only issues that may significantly impact the standards level.

After the framework workshop's comment period closes for a given rulemaking, the rulemaking team prepares an analytical plan. The analytical plan incorporates stakeholder comments and reflects DOE decisions about key questions concerning analytical scope. Such DOE decisions are made in concert by the Appliance Standards Program, Office of General Counsel, and the Office of Policy and International Affairs. Examples of such decisions would include the approach for estimating the cost-efficiency curve or the number of sensitivity cases to be run in the life-cycle cost analysis. The analytical plan then becomes the roadmap for the rulemaking team, placing bounds on the scope of analysis and setting a timeline for intermediate milestones. The analytical plan addresses all analysis components (e.g., market and technology, engineering, life-cycle costs, national impact analysis, etc.) and therefore corresponds to the chapters of the eventual ANOPR Technical Support Document. Moreover, after the comment periods close for the ANOPR and NOPR stages, the analytical plans are updated based upon comments received and subsequent internal meetings among the Appliance Standards Program, Office of General Counsel, and Office of Policy and International Affairs. The ANOPR and NOPR comment periods may redirect the analysis, or even expand it, but the analytical scope is constrained during each rulemaking stage by the version of the analytical plan cast at the beginning of that stage. Updating these plans after the ANOPR and NOPR comment periods ensures that the analysis is adapted to address stakeholder concerns, but also prevents the analysis from becoming unmanageable in scope.

6.3.2 *"Streamlined Rulemaking" Analysis for Some Products*

To date, DOE has performed an exhaustive analysis for each of the standards rulemakings. For some products, it may be possible to reduce the amount of analytical effort if there is general sentiment among involved parties that the usual detailed analysis will not add significant value to the information considered in the decision-making criteria. For example, in some circumstances, the key issues may be clearly understood and the ultimate decision may depend on only one key issue that should be the focus of the analysis. In other cases, the lack of potential energy savings may not justify extensive analysis.

In the past, the Department's analyses have tended toward greater complexity and detail. For every new rulemaking, the Department will strive to make the analysis as simple as possible. To meet the schedule proposed in section 7, each and every analytical decision, beginning with those made at the framework document stage, will be made with the objective of simplification, while still meeting statutory requirements.

Using greater aggregation in establishing product classes is one of the most effective strategies to limit analytical complexity. In general, when evaluating and establishing energy-efficiency standards, the Department divides covered products into classes according to: (a) the type of energy used, or (b) capacity, or other performance-related features, such as those that affect both consumer utility and efficiency. The analysis may demonstrate that different energy-efficiency standards should apply to the different product classes. For instance the three highest priority rules in 2005 consisted of: two product classes for Commercial Unitary Air Conditioners; six for Residential Furnaces and Boilers; and thirteen

for Distribution Transformers. Determining the need and defining product classes is often difficult. In general, classes are defined using information obtained in discussions with manufacturers, trade associations, and other interested parties. Since the number of product classes selected determines the number of cost-efficiency curves that must be developed in the engineering analysis, and these in turn influence the number of LCC analyses performed, the Department will seek stakeholder input on ways to structure the analysis with the minimum acceptable number of product classes.

Properly structuring the engineering analysis can also streamline the analysis. The Department has used four general methods to develop manufacturing cost-versus-efficiency curves for the engineering analysis: manufacturer cost surveys at discreet efficiency levels, retail price surveys, design-option modeling (combined with engineering calculations or computer simulations), and physical product teardowns and cost modeling. Since surveys are the least time-consuming and costly, these approaches will be favored and other approaches used only as supplemental validation if needed. Exceptions to this approach will occur where stakeholders clearly demonstrate that teardowns or more in-depth engineering analyses are required.

Life-cycle-cost analyses also exhibit varying levels of complexity. One area of increasing complexity is consumer subgroup analysis. Prior to the Process Rule, the analysis of consumer impacts estimated impacts on consumers based on national average energy prices and energy usage. The Process Rule increased the scope of the LCC analysis to include assessments of impacts on subgroups of consumers based on major regional differences in usage or energy prices and significant variations in installation costs or performance. The definition of a subgroup has been applied at many levels: consumer demographics (e.g., low income), building type (e.g., hotel), ownership, and even individual households in the Residential Energy Consumption Survey (RECS) database. In the future, the Department will perform preliminary analyses and consider stakeholder comments to reduce the number of subgroups for which a complete analysis is performed.

Other significant analyses include the Shipments Forecasts, National Impacts Analysis, and the Manufacturer Impact Analysis. Together with stakeholders, DOE will work diligently to ensure that these and the previously described analyses are simple, transparent, and sufficient to meet statutory criteria.

6.4 Complexity of Rulemaking Process

The complexities of both the required analysis and the overall standards-development process were described in sections 4 and 5 of this report. Resource planning becomes extremely important as the number of simultaneous activities increases and the time to deliver a final product is shortened. The Department will implement broad-reaching process changes to ensure full compliance with rulemaking requirements, reduce errors and associated rework, and better define and coordinate rulemaking tasks to maintain the rulemaking timetable.

6.4.1 Regulatory Procedures Guidelines and Training

In addition to the public comment requirements specified by the Administrative Procedure Act, the Department must now respond to 13 other procedural requirements. The Appliance

Standards Program must stay informed and in compliance with all government-wide directives. All appropriate forms, instructions, and directives were compiled into a centralized reference library. The Appliance Standards Program staff and support contractor personnel were brought together in February 2005 for a review and update on those government-wide requirements. This was a preemptive action taken to avoid possible mistakes and delays. Similar training sessions for staff and support contractor personnel will be held in the future as needed.

6.4.2 Project Management Assistance from the National Energy Technology Project Management Center

The progression of rulemaking tasks is monitored using project management software maintained until recently by the standards analysis group at a national laboratory. These schedules include both analysis and procedural tasks performed by the contractors, within DOE and with organizations outside DOE. A typical rulemaking schedule includes no fewer than 19 interrelated tasks.

Carefully monitoring the schedule is particularly important in the case of inadvertent, unavoidable, or unanticipated delays. Despite diligent efforts by staff and contractors, sometimes errors are made or an additional analysis becomes necessary due to some variable that was not anticipated. Frequently, feedback from and coordination with other agencies or from stakeholders makes it necessary to revisit an issue and make substantial revisions to the analysis. Without a proper understanding and restructuring of the project schedule, unplanned tasks can derail the rulemaking schedule.

In the past, major activities and timelines for rulemaking projects were entered into project management software as a record of what was accomplished. In order to benefit from true project management, these functions have recently been assigned to the National Energy Technology Laboratory (NETL) Project Management Center. NETL has expertise in using software to actively manage projects and produce reports that raise important performance issues to DOE management. This capability is now being utilized.

6.4.3 Fiscal Management

Resource planning includes all resources, including funding. It is reasonable to expect costs to escalate with time and economic indexes. Being fiscally responsible requires reviewing processes and providers for alternate, more cost-effective ways of accomplishing more with available funding. Mindful that there are differences between price, cost and value, a periodic review of alternatives is good business practice.

One area with potential for fiscal efficiency improvements is the matching of level of needs with level of expertise. Some tasks require the expertise of scientists with the associated price factor. Other tasks only require the skills of a technician or clerical worker. The Department will disaggregate projects where possible into tasks needing various skill levels, thereby opening the possibility for cost reductions.

6.4.4 "Expedited Rulemaking" Process

The Department will use an "Expedited Rulemaking" Process when stakeholders submit an acceptable joint-proposal recommendation to the Department for standards levels for specific covered products or technologies. In the past, manufacturers, trade associations, energy

efficiency advocacy organizations and other stakeholders have used DOE-developed analysis to focus on key issues and come to agreement on beneficial energy-efficiency-standards levels. This was the case with fluorescent ballasts and commercial unitary air conditioners.

The Department must review any such joint-proposal recommendations for satisfaction of legislative requirements, but will encourage stakeholders to develop these kinds of recommendations. An accelerated or expedited rulemaking process can sometimes be applied that combines a notice of proposed rulemaking along with a direct final rule. If there are no substantial adverse comments received during the comment period, the direct final rule can take effect.

One measure that the Department is taking to encourage joint stakeholder recommendations is that it plans to conduct a preliminary manufacturer impact analysis (MIA) during the ANOPR phase of the rulemaking. By discussing preliminary manufacturer impacts (e.g., capital expenditures, lost jobs, etc.) at the ANOPR stage, it is hoped that stakeholders can negotiate joint recommendations earlier and more often. Consistent with this change, it is noted that the addition of a cursory MIA to the ANOPR stage makes it nearly impossible to shorten the ANOPR stage below 18 months.

6.5 Document Review and Clearance Process

Historic deficiencies in inter-office coordination and the review process are detailed in section 5 of this report. If the rulemaking process is to be significantly streamlined, the internal review process must be reformed. Multiple offices and/or programs within the Department collectively own the problem. The solution must involve all of these entities.

6.5.1 Product Quality

Comments received through the formal public comment process, as well as comments made by visitors to the Department, have noted the high quality of the rulemakings and support documents. Such documents include ANOPR, NOPR, and final rule notices, and also TSDs. While the increase in quality is good news, the time required for the preparation, and number of iterations of the final draft must be reduced. A major element of the resource planning process is catching errors early and preventing substandard work from progressing through the concurrence chain. The Appliance Standards Program will emphasize improved document quality, which will expedite the concurrence process. With improved document quality, concurrence reviewers will be able to focus their efforts on legal and policy issues.

While product quality improvement is primarily an issue having to do with individual documents, the program also plans to conduct thorough reviews of its analytical tools across all pending rulemakings. The context for such reviews will be the Analytical Plans, as discussed in section 6.3.1.

6.5.2 Document Consistency

The Appliance Standards Program actively works on many standards rulemakings. In the past, approaches, styles and even formatting were unique to each of the teams and documents. While some uniqueness was required because the standards were for entirely different products, the uniqueness made it very difficult for those reviewing all the documents. That same difficulty would exist for external reviewers such as DOJ and OMB,

as well as various stakeholders including trade associations, manufacturers and energy-efficiency advocacy organizations.

In order to streamline the process and to make it more user friendly, several unifying tools and procedures were recently developed. These recent improvements include:

1. **Style Guide** – Writing guide developed by the Appliance Standards Program with reviews and additions from GC and PI. This guide includes formatting, punctuation, active-versus-passive-voice examples and other writing-quality-control guidelines. This was introduced to eliminate the review iterations that were almost exclusively style issues. Those iterations caused delays and often became differences of opinion.
2. **Rulemaking Boiler Plate Template** – From an accuracy perspective, there were inconsistencies between rulemaking document sections and updated language that impacted almost all rulemaking publications. Different terms were used for the same procedure and different guidance was given to stakeholders wishing to submit comments during an official comment period. Now the Department relies on boiler plate modules that were pre-approved and carefully crafted.

6.5.3 Crosscutting Review Team

A solution to problems of the past is to speed up the rulemaking process by the establishment and empowerment of a “Crosscutting Review Team.” While members of this team will primarily be the current DOE staff participants in rulemaking activities, the way they will operate will be substantially different from the current process. Recognizing the current role, responsibility, reporting channel and authority issues, a process will be used that adds clarity, certainty and timeliness.

Approach: There will essentially be three functions that this team will provide:

- Day-to-day decisions and direction for all but the most challenging issues;
- Coordination through the Office of the Assistant Secretary for Energy Efficiency and Renewable Energy (EE) to the Office of the Under Secretary for Energy, Science, and Environment; and
- Present and expedite concurrence to a panel consisting of EE-1, GC-1 and PI-1, and S-3 (i.e., the senior concurrence panel).

EE-1, GC-1 and PI-1 have responsibility for their respective areas and need to sign off on concurrence packages. BT/GC/PI staff and management need to review work in process, make decisions and give guidance to the individual project teams working on specific rulemakings.

The Crosscutting Review Team will meet one afternoon per week, if necessary, to review all appliance standards projects. Individual project teams working on rulemakings will be given time to give an update and raise issues requiring guidance. The Crosscutting Review Team will be assembled to review issues that are of importance to GC and PI, and the Appliance Standards Program will provide an advanced agenda before each meeting of the Crosscutting Review Team. For all but the most challenging issues, the team will make decisions and give

guidance to each of the rulemaking teams. The Crosscutting Review Team will generate a weekly status update raising issues that should be of interest to management.

EE-1 or S-3 will meet with the team on a regular basis to discuss progress and concerns pertaining to the rulemakings. EE-1 will give guidance and S-3 will convene the panel of EE-1, GC-1 and PI-1 for concurrences and issues requiring special attention.

6.5.4 Concurrence as an Event

The regular meetings of the Crosscutting Review Team will set the stage for “concurrence as an event.” By monitoring and reviewing issues of interest and importance to their element (i.e., GC, PI, BT) within the Department, members of the Crosscutting Review Team will work through issues and concerns before rulemakings enter mandatory concurrence. When a document is approaching the mandatory concurrence stage, a meeting of the senior management concurrence group (EE-1, GC-1, PI-1) will be scheduled. S-3 may take part in these meetings. The mandatory concurrence document will be distributed to this senior management group one week before the concurrence meeting. Members of the Crosscutting Review Team will be responsible for briefing their senior management before the scheduled meeting.

Senior management will discuss the document in concurrence at this meeting. If the rulemaking document has successfully satisfied all requirements, the senior management group could sign off on the concurrence package at the meeting. If any issues or concerns remain after the Crosscutting Review Team’s actions and edits, the senior management group would identify any necessary actions and commit to concurrence upon receiving the specified revision or action.

6.6 Three-Year Rulemaking Timetable

The cornerstone of the Department’s multi-year plan is the proper execution of a 36-month rulemaking timetable. However, since the Process Rule was published in 1996, the Department’s rulemakings have, with a single exception, always taken considerably more than three years to complete. Table 10 provides a summary of the rulemaking timelines for the three product rulemakings completed under the guidelines of the Process Rule. All three rules were initiated with the issuance of an ANOPR long before the publication of the Process Rule in July 1996. The rulemakings were reinitiated in 1997/1998 with the publication of a framework document and a public meeting to review this document. In truth, considerable information gathering and analytical work had already been conducted prior to the framework workshops. For example, the Department published a Design Option Report for Clothes Washers in October 1996 and hosted a Screening Analysis Workshop in November of that year.

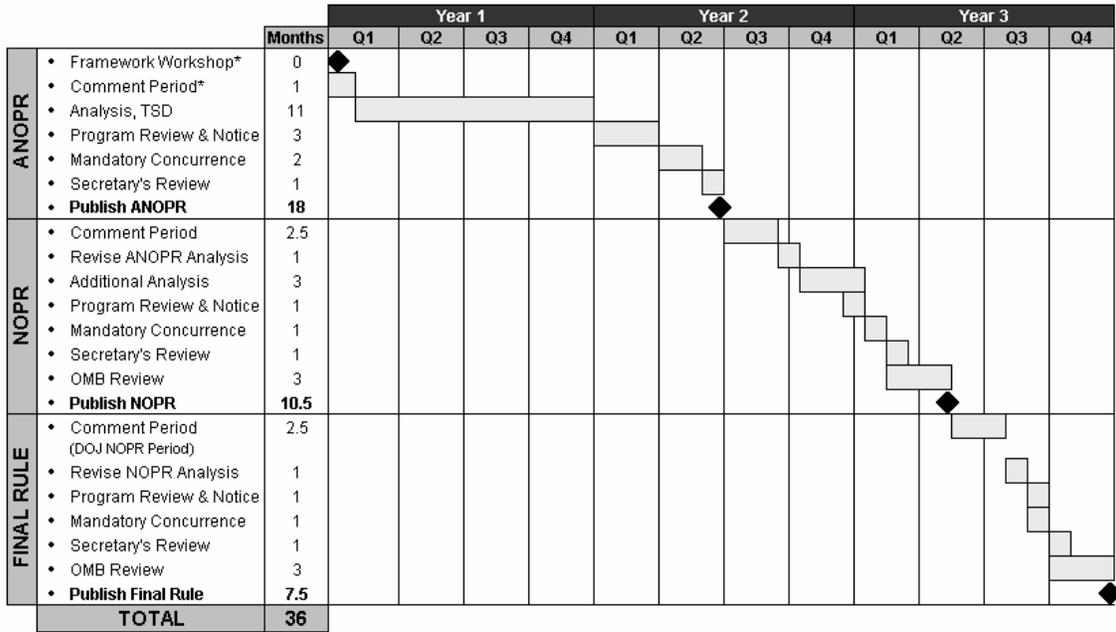
Table 10 Historical Schedules under Process Improvement (Time Counted After Process Improvement)

	Clothes Washers		Water Heaters		Residential AC	
	Date	Months	Date	Months	Date	Months
ANOPR	11/14/94		9/28/90		9/8/93	
Framework Workshop	7/23/97	0	6/24/97	0	6/30/98	0
ANOPR/Supplemental ANOPR	11/19/98	16			11/24/99	17
NOPR	10/5/00	38.5	4/28/00	34	10/5/00	28
Final Rule	1/12/01	42	1/17/01	43	1/22/01	33

With an elapsed time of 33 months between framework workshop and final rule, the central air conditioner rulemaking is the only rulemaking to have been conducted within the 36 months specified by the Process Rule. A number of events surrounding this rulemaking highlight the potential risks of shortening the rulemaking timetable. For example, the 13 SEER final rule left unaddressed the appropriate standard levels for several classes of niche-application central air-conditioning products. This resulted in manufacturer uncertainty pertaining to both standard coverage and level and initiated a flurry of requests for exception to the Department’s Office of Hearings and Appeals.

Despite the history of rulemaking delays, the Department believes that the process improvements described in this section will allow it to complete rulemakings within 36 months. Figure 3 displays the major elements of a standards rulemaking and the allocated length of time to complete each element. As shown, the 36-month timeline will include approximately 16 months of analysis, six months of public review and comment, and six months of review time for OMB. Internal DOE reviews will add another eight months to the timeline. As previously described, of this 36-month timeline, 11 months are mandatory allowance times for comment and review that are set by external requirements and are not controlled by the Department.

Figure 3 Thirty-Six Month Rulemaking Timetable



*Not a Statutory Requirement, but DOE Practice. Rulemakings may be initiated by framework workshops, or some initiations may take another form.

7 Implementation Plan and Schedules

As the Department implements the process improvements needed to address the backlog of rulemakings and meet the new requirements of EPACK 2005, it recognizes that work cannot begin on all required rulemakings simultaneously. Rulemakings must be scheduled with consideration of statutory requirements and other factors. To assist the Department in this effort, conservation groups, manufacturers, trade associations, State agencies, utilities and other stakeholders were asked to provide their thoughts and input to be considered in structuring the multi-year schedule of rulemakings.

Scheduling principles were the focus of a public meeting held by the Department on November 15, 2005. During the meeting, the Department described possible scheduling approaches and solicited public feedback and input on any additional scheduling principles or approaches. Feedback obtained during this meeting and in subsequent written comments was considered in preparing the schedule presented in section 7.3 of this document.

The full-compliance schedule is *firm and achievable* and employs all the new and recently implemented process improvements. It expeditiously completes the currently active rulemakings and meets all deadlines for the newly covered EPACK 2005 products. With regard to the standards backlog, the Department has scheduled one standard for all products in the backlog by June of 2011 (the scheduled backlogged standard may be a first- or second-cycle revision).

7.1 Stakeholder Consultation

7.1.1 Public Meeting Format

The Appliance Standards Program held a stakeholder public meeting on November 15, 2005. The objective of the meeting was to address how the Department should develop and implement a full compliance scheduling plan for appliance standards rulemaking activities. In the Federal Register notice announcing the meeting, the Department stated that it “will finalize its standards scheduling plan after consideration of comments received during and following the public meeting.” 70 FR 61395 (October 24, 2005).

Prior to the November 15, 2005, public meeting on schedule setting, the Department posted the following materials on its website at http://www.eere.energy.gov/buildings/appliance_standards/2006_schedule_setting.html:

- A comprehensive list of appliance standards rulemaking activities, including specified statutory deadlines where applicable;
- Data sheets for most of the products in the rulemaking activities list;
- Excel spreadsheets showing energy savings analysis for many of the products; and
- A report that was prepared in response to a petition to DOE for new, amended standards for refrigerators, refrigerator-freezers, & freezers: “DRAFT

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TECHNICAL REPORT: Analysis of Amended Energy Conservation Standards for Residential Refrigerator-Freezers,” October, 2005.

The public meeting consisted of five main parts:

DOE Charge and Challenges - In this session, DOE reviewed a handout summarizing its charge and challenges. The summary was broken down according to backlogged standards, pre-EPACT but non-backlog standards requirements, EPACT 2005 standards requirements (both congressionally prescribed and standards that DOE needs to develop), test procedures, and miscellaneous items such as petitions and waivers.

Stakeholder Opening Comments - Each stakeholder that wished to provide opening comments was afforded time to do so.

Recent and Forthcoming Process Improvements - DOE reviewed its recent process improvements (which are primarily administrative) and also described forthcoming management-level process improvements such as bundling and valley-filling.

Stakeholder Feedback on Process Improvements - Stakeholders commented on the process-improvement ideas put forth by DOE, relying on historical experiences where relevant.

Scheduling Principles - DOE sought input on the principles that should be considered in developing its full compliance scheduling plan. Alternative approaches for developing the schedule were suggested by DOE. These approaches included scheduling by criteria, such as potential energy savings, statutory order (first in/first out), and maximizing the number of standards in a given time period. Stakeholders recommended additional principles that DOE should follow in developing its schedule.

7.1.2 Stakeholder Comments

Rulemaking Process Improvements: The Department received some stakeholder comments related to the rulemaking process. These recommendations, which can also aid in the creation of a new schedule, include the bundling of related products to increase the rate at which standards are issued, limiting the length of future rulemakings, staggering rulemakings, streamlining certain analyses, issuing expedited rulemakings, and allowing technical updates.

1. Product Bundling: The Edison Electric Institute (EEI) commented that the bundling process works well in some situations, particularly when products have similar manufacturers or are competing products (e.g., electric, gas and oil water heaters). (EEI, No. 23 at p. 4; Public Meeting Transcript, No. 6 at pp. 83-84)³ The National Rural Electric Cooperative Association (NRECA) commented that product bundling works well for its association because it can

³ The November 15, 2005 public meeting on schedule setting has been assigned docket number DOE-EE-PS-2006-001. Comment references have the form: organization name, docket number at page number. If the comment is an oral comment, the words “public meeting transcript” replace the organization name.

reduce the number of member review requests by sending out two or three products in each announcement. (Public Meeting Transcript, No. 6 at p. 93) The Association of Home Appliance Manufacturers (AHAM) commented that although industry is not opposed to the process, product bundling ignores the critical issue of cumulative regulatory burden because it allows multiple standards to be imposed on manufacturers at one time. (Public Meeting Transcript, No. 6 at pp. 81-83) Conversely, the Appliance Standards Awareness Project (ASAP) commented that product bundling can identify and spread out regulatory burden on manufacturers. (Public Meeting Transcript, No. 6 at pp. 86-88) The National Electrical Manufacturers Association (NEMA) commented that bundling similar products is a worthwhile conceptual approach to accelerate rulemakings, but discussion needs to occur to determine the truest alignment of similar rulemakings. (NEMA, No. 19 at p.2) A group of organizations, including the Alliance to Save Energy (ASE), the American Council for an Energy-Efficient Economy (ACEEE), ASAP, the Consumer Federation of America (CFA), the Northeast Energy Efficiency Partnerships (NEEP), and the Northwest Power Planning and Conservation Council (referred to as “joint commenters” in this subsection), issued a joint comment to the Department. The joint commenters favor the bundling of related products as it may expedite the rulemaking process and facilitate negotiated agreements; however they fear that bundling unrelated products could slow the rulemaking process. (ASE-ACEEE-ASAP-CFA-NEEP-NPPCC, No. 16 at p. 2) The Gas Appliance Manufacturers Association (GAMA) commented that product bundling still requires separate analyses, which may or may not be similar, for each product. GAMA also maintains that peaks and valleys will still pose a problem under the bundling process. (Public Meeting Transcript, No. 6 at pp. 92-93) AHAM, ASAP and Alliance Laundry Systems, LLC commented that product bundling should not be used to raise the apparent energy savings of several smaller products, thus moving that bundle higher on the schedule. (Public Meeting Transcript, No. 6 at pp. 198-199; Alliance Laundry Systems LLC, No. 10 at p.3)

2. Length of Rulemakings: The joint commenters and the New York State Energy Research and Development Authority (NYSERDA) maintain that future rulemakings should be limited to 30 months. (ASE-ACEEE-ASAP-CFA-NEEP-NPPCC, No. 16 at p. 8; NYSERDA, No. 27 at pp. 1-2) At the public meeting, the New York State Attorney General’s office indicated that Congress believed it would be possible to, in some cases, issue final rules within 18 months after issuing a test procedure. (Public Meeting Transcript, No. 6 at pp. 167-168) In its written comments, the New York State Attorney General’s office did not focus on individual rulemaking length, but indicated that each product in the backlog should have a standard issued by December 31, 2008 (suggesting a three-year maximum rulemaking timeline). (New York State Attorney General’s office, No. 25 at p. 10)

3. Rulemaking Staggering: AHAM commented that product staggering may allow DOE to better manage its staff resources. (Public Meeting Transcript, No. 6 at pp. 82-83) ASAP also commented that staggering makes sense. (Public Meeting Transcript, No. 6 at p. 89) Alliance Laundry Systems commented that staggered rulemakings may not aid in realignment of the program, as it seems that all backlogged products need to be started at the same time. (Alliance Laundry Systems LLC, No. 10 at p.3) The joint commenters offered support for a “phased-in” approach. (ASE-ACEEE-ASAP-CFA-NEEP-NPPCC, No. 16 at p. 9) The New York State Attorney General’s office supported the idea of staggered final rule dates in its written comments. (New York State Attorney General’s office, No. 25 at p. 10)
4. Streamlined Analysis: AHAM, ACEEE, and Southern Company commented that streamlining works on a product-to-product basis, as some rulemakings are more complicated than others. (Public Meeting Transcript, No. 6 at pp. 107-108; Public Meeting Transcript, No. 6 at pp. 106-107; Southern Company Services, No. 12 at p. 2) The joint commenters maintain that greater streamlining opportunities likely exist with products offering relatively small amounts of energy savings, thus allowing DOE to use its resources for rules offering the greatest potential benefit. (ASE-ACEEE-ASAP-CFA-NEEP-NPPCC, No. 16 at p. 2) Alliance Laundry Systems LLC commented that streamlined analysis is appropriate if it does not reduce the quality of the rulemaking or allow the introduction of questionable data. (Alliance Laundry Systems LLC, No. 10 at p.3)
5. Expedited Rulemakings: The Natural Resources Defense Council (NRDC) and ASE support expedited rulemakings resulting from joint stakeholder recommendations. (Public Meeting Transcript, No. 6 at pp. 94-96; Public Meeting Transcript, No. 6 at pp. 110-112) EEI commented that DOE should work with manufacturers and stakeholders in a public process to expedite rulemakings for specific products. (EEI, No. 23 at p. 5) Alliance Laundry Systems commented that expedited rulemakings are appropriate when stakeholders agree that a low manufacturer impact and significant energy savings exist. (Alliance Laundry Systems, No. 10 at p. 3) At the public meeting, General Electric also expressed support for expedited rulemakings. (Public Meeting Transcript, No. 6 at pp. 177-179) The joint commenters supported expedited rulemakings and believe that the best way for DOE to expedite rulemakings is to complete and publish ANOPRs, but warn that moving analyses (such as the MIA) to the ANOPR phase would delay the ANOPR publication. (ASE-ACEEE-ASAP-CFA-NEEP-NPPCC, No. 16 at p. 2) Similarly, ACEEE commented that expedited rulemakings have advantages over drawn-out rulemakings when they work, but the Department has the responsibility to get data out quickly so all stakeholders can have access to the analysis. (Public Meeting Transcript, No. 6 at pp. 91-92)

6. Technical Correction Updates: Whirlpool commented that the program may be well served to institute a process where technical corrections and/or updates can be made to a standard or test procedure without opening a new rulemaking. (Whirlpool Corporation, No. 13 at p. 3)

Schedule-Setting Principles:

1. Active Rulemakings: The joint commenters and NYSERDA maintain that DOE should complete the active rulemakings first. (ASE-ACEEE-ASAP-CFA-NEEP-NPPCC, No. 16 at p. 8; NYSERDA, No. 27 at pp. 1-2)) The New York State Attorney General's office commented that it is appropriate to expedite the completion of rules that are underway, suggesting that all rulemakings currently underway be completed within six months – or by no later than July 31, 2006. (New York State Attorney General's office, No. 25 at pp. 9-11) GAMA, speaking mainly in reference to residential furnaces and boilers, commented that in cases where DOE has an active, high-priority rulemaking underway with substantial completed analysis, the Department should complete the rulemaking. (GAMA, No. 17 at p. 2)
2. EPACT 2005: The joint commenters and NYSERDA commented that DOE should complete the active rulemakings first, and then simultaneously work on the backlog and EPACT 2005 standards requirements. (ASE-ACEEE-ASAP-CFA-NEEP-NPPCC, No. 16 at p. 8; NYSERDA, No. 27 at pp. 1-2) At the public meeting, ASAP added that DOE should not plan to miss any EPACT 2005 requirements. (Public Meeting Transcript, No. 6 at pp. 193-194) The ASAP recommendation to work on the backlog and EPACT 2005 requirements simultaneously was similar to the view expressed by the New York State Attorney General's office and NRDC. (New York State Attorney General's office, No. 25 at pp. 12-14; Public Meeting Transcript, No. 6 at pp. 28-29)
3. Energy Savings Potential: NEMA commented that the Department should refocus its resources in areas of greater energy cost savings. (NEMA, No. 19 at p. 3) GAMA commented that the most important factor to consider is the potential national energy savings that can be realized through a new standard. GAMA continued, stating that the Department should not waste resources on revising standards for a product that consumes relatively little energy on a national scale, even though DOE is behind the statutory schedule for that product. (GAMA, No. 17 at p. 1) In its written comments, The New York State Attorney General's office stated that of the remaining overdue rulemakings, rules expected to yield the most substantial energy savings should be completed first. (New York State Attorney General's office, No. 25 at p. 10) The joint commenters express their view that energy savings potential should be used to schedule rulemakings within the constraints of other scheduling principles such as completing the active rulemakings and

meeting all EPACT 2005 mandatory deadlines. (ASE-ACEEE-ASAP-CFA-NEEP-NPPCC, No. 16 at p. 2) At the public meeting, ASE commented that the law from which a mandate comes is irrelevant for scheduling – the Department should schedule product rulemakings in a manner that sets larger energy savings standards in the near-term. (Public Meeting Transcript, No. 6 at pp. 191-192) The majority of stakeholders also favor addressing products with high potential national energy savings, but not all agree that saving energy is the most important scheduling principle. EEI and GAMA indicated that energy savings, if used for scheduling, should mean *realistic* rather than *potential* energy savings because the use of potential energy savings assumes that the standard would push to the maximum technology. (Public Meeting Transcript, No. 6 at pp. 180-181; Public Meeting Transcript, No. 6 at p. 166) General Electric suggested limiting the use of potential energy savings to those products with *statutorily required* rulemakings. (Public Meeting Transcript, No. 6 at p. 175)

4. Statutory Date: Maytag commented that statutory order should be the most important scheduling principle. (Public Meeting Transcript, No. 6 at pp. 183-185) General Electric commented that DOE should focus on the statutorily required rulemakings first, sorting these rules by potential energy savings and those that use energy directly. (Public Meeting Transcript, No. 6 at p. 175) AHAM emphasized that those products with the most overdue standards should be subject to rulemakings first, while also considering the number of past rulemakings for a given product and whether or not the statutorily required number of rulemakings has been conducted. (Public Meeting Transcript, No. 6 at pp. 118-120; AHAM, No. 29 at p. 1) Additionally, Alliance Laundry Systems and Whirlpool stated that the Department should not engage in rulemakings where statutory requirements have already been met. (Alliance Laundry Systems, No. 10 at p. 1; Whirlpool, No. 13 at p. 2) Alliance Laundry Systems suggests that the Department conduct the most overdue standards rulemakings first. (Alliance Laundry Systems, No. 10 at p. 1)
5. Time Since Last Standard: Several commenters feel that the time elapsed since the last standard issuance should be a key principle for scheduling rulemakings. They believe that the Department should schedule rulemakings for those products with recent standards effective dates after the rulemakings for products that have not been regulated for many years or never before. (GAMA, No. 17 at p. 2; EEI, No. 23 at p. 4; Southern Company, No. 12 at p. 3; AHAM, No. 26 at pp. 1-2; Public Meeting Transcript, No. 6 at pp. 197-198) Comments indicated that this would separate standards affecting certain related products, helping to alleviate the cumulative regulatory burden reported by some manufacturers, while also allowing the Department to focus on products that do not have regulations (or on those with outdated standards). (Public Meeting Transcript, No. 6 at pp. 122-132; Alliance Laundry Systems LLC, No. 10 at p. 3; Whirlpool Corporation, No. 13 at p.2; Maytag

Corporation, No. 22 at p. 2; AHAM, No. 29 at pp. 4-5) Conversely, ACEEE commented that that number of previous rulemaking cycles should not be a factor in prioritization, as the amount and cost of energy saved are the overwhelming criteria. (Public Meeting Transcript, No. 6 at pp. 136-137)

6. All at Once: The New York State Attorney General's office asserted that no evidence was presented to indicate why all rulemakings cannot be conducted at once. (New York State Attorney General's office, No. 25 at pp. 12-14) Conversely, GAMA commented that it is clear that DOE cannot all at once institute rulemakings for all of the products for which it has fallen behind statutory schedules. (GAMA, No. 17 at p. 1)
7. Reduce Regulatory Burden: Several commenters advised that DOE should be conscious of the cumulative regulatory burden placed on industry. (Alliance Laundry Systems LLC, No. 10 at p. 3; Whirlpool Corporation, No. 13 at p.2; Maytag Corporation, No. 22 at p. 2; AHAM, No. 26 at p. 2)
8. Other Considerations: Southern Company and EEI recommended selecting products in a manner to create equitable standards between competing types of equipment. Both groups also stated that the Department should consider products with national security and resource scarcity implications. (Southern Company, No. 12 at pp. 1-2; EEI, No. 23 at pp. 2-4) EEI also recommended creating a balance in the fuel types used by regulated products. (EEI, No. 23 at pp. 2-3) Whirlpool commented that the Department's efforts would be the most effective in the future by the removal of old, "energy hog" appliances from the grid. (Whirlpool, No. 13 at p. 4) In its written comment, NEMA suggested that the Department work with states and encourage participation in the open federal rulemaking process instead of pursuing independent agendas. (NEMA, No. 19 at p. 2) GAMA commented that DOE should not overlook what is being accomplished by market forces, and perhaps turn its attention to a product with a greater need for mandatory standards in order to achieve energy savings. (GAMA, No. 17 at p. 2) Similarly, Whirlpool and General Electric commented that DOE should not forget the importance of market transformation programs including ENERGY STAR, tax credits, and consumer education. (Whirlpool, No. 13 at p. 2; Public Meeting Transcript, No. 6 at pp. 175-177)

Scheduling Hierarchy: While most stakeholders commented that DOE should use some combination of the aforementioned principles as a basis for setting a schedule, there was no clear endorsement or ranking of the relative importance of each principle. In the view of most energy-efficiency advocates, all rulemakings should be expeditiously completed while maintaining high quality analysis. The energy-efficiency advocates also tend to place more emphasis on energy savings in creating the schedule. Appliance manufacturers generally support completing rulemakings for the most overdue products first (i.e., statutory order), while maximizing energy savings and diminishing cumulative

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regulatory burden as secondary scheduling principles. Trade organizations are generally aligned with the views of their members.

In their written submission, the joint commenters explained the principles of scheduling that they feel DOE should use in developing its full-compliance scheduling plan. The principles set forth in the joint commenters' memo are summarized as follows:

1. Expeditiously complete all currently active rulemakings.
2. Meet all deadlines for EPACT 2005 products.
3. Limit future rulemakings (i.e., those not yet initiated) to 30 months.
4. Complete all backlog rulemakings as quickly as possible (recommended within next three years).
5. If the three-year time frame for backlog clearance cannot be met, DOE should catch up on its legal obligations using phased-in approach within five years (i.e., by the end of 2010). Such a phased-in approach should utilize the following sub-principles within the constraints of principles 1-4:
 - a. Use potential energy savings to order the schedule.
 - b. Group products with similar technologies and/or by manufacturing industry.
 - c. Those products with standards going into effect in 2004-2007 should be scheduled later. (ASE-ACEEE-ASAP-CFA-NEEP-NPPCC, No. 16 at pp. 8-9)

NYSERDA agreed with these scheduling principles presented by the joint commenters. (NYSERDA, No. 27 at pp. 1-2)

NRDC urged the Department to complete all statutory requirements quickly, including both the backlog and EPACT 2005 requirements. NRDC also stated that petitions must be addressed simultaneously with the backlog and EPACT 2005 requirements. (Public Meeting Transcript, No. 6 at pp. 28-29)

Several manufacturers proposed a different hierarchy for scheduling principles. While manufacturers recognize the importance of energy savings to the program, the Nation, and to scheduling the rulemakings, manufacturers generally support scheduling principles related to time (i.e., statutory dates/order, time since last standard) or scheduling products with the fewest number of rulemaking cycles first. (Alliance Laundry Systems LLC, No. 10 at p. 1; Public Meeting Transcript, No. 6 at p. 175) Manufacturers also supported finishing the active rulemakings. Manufacturers suggest that products with the most recent rulemakings should be moved to the end of the schedule, as this will ease the cumulative regulatory burden felt by manufacturers in some industries. (Alliance Laundry Systems LLC, No. 10 at p. 3; Whirlpool Corporation, No. 13 at p.2; Maytag Corporation, No. 22 at p. 2) In addition, several manufacturers presented views about specific products, indicating whether they favored rulemaking, and if so, when the rulemaking should be scheduled.

The views of the represented trade associations are generally aligned with those of their members. Some trade associations also highlight the excessive regulation of certain industries over others. (AHAM, No. 29 at pp. 4-5) The Association of Home Appliance Manufacturers made the offer that that they would like to work with the Department and with other stakeholders in the near-term to develop new efficiency standards on dishwashers and ranges and ovens, perhaps in an expedited process. (Public Meeting Transcript, No. 6 at pp. 120-121)

7.2 Development of the DOE Full-Compliance Scheduling Plan

The Department constructed its full-compliance scheduling plan, taking into consideration the oral and written comments received from stakeholders. The Department began with a few fundamental views about the schedule:

1. The schedule should be comprehensive, covering all backlog rulemakings and EPACT 2005 products. The schedule should also address statutory requirements in existence before EPACT 2005 that are not yet in the backlog.
2. In addition to being comprehensive, the schedule should be *firm and achievable*.
3. All available resources are needed to accomplish this aggressive schedule. Limited resources will be available to address waivers and to update test procedures. Test procedure updates will only be done when linked to a new standards rulemaking and deemed essential.
4. In an effort to expeditiously clear the backlog, the Department's schedule has no provision until after fiscal year 2011 for optional rulemakings or rulemakings initiated in response to future petitions. Prior to fiscal year 2012, the Department shall neither consider rulemakings in response to stakeholder petitions, nor will it be conducting rulemakings on products where it is authorized but not statutorily required to do so. As examples, the Department will not consider starting rulemakings for residential refrigerators or residential furnace fans until fiscal year 2012.

Stakeholder comments strongly supported that EPACT 2005 dates be met and that active rulemakings (e.g., MV dry-type and liquid-immersed distribution transformers, and furnaces and boilers) be completed without delay. Therefore, these two constraints anchored the development of the Department's schedule. For the two major active rulemakings, distribution transformers and furnaces and boilers, the Department plans to issue final rules months prior to the dates specified in the current regulatory agenda.

The Department's schedule is presented in a structure that allows similar products and technologies to be addressed as a group by dedicated teams. The seven groups (corresponding to teams) are:

1. Heating,
2. Transformers and Motors,
3. Lighting,
4. Home Appliances,
5. Space Cooling,

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6. Commercial Refrigeration, and
7. Battery Chargers and External Power Supplies.

The schedule presented below also incorporates the process improvement concepts discussed in section 6. The Department's schedule bundles backlog products into the basic team-oriented framework presented above. Making use of product bundling and valley-filling techniques, the multi-year schedule presents activities in a modular fashion comprised of rulemaking teams; each team supports the development of two or three distinct rulemakings. The Department's bundling methodology groups together products with technology similarity and/or matching trade association coverage. This logic employed for bundling also facilitated grouping of products within the backlog. In order to create these bundles and to place the backlog products into the schedule, the Department made the following three assumptions:

1. The length of a rulemaking is 36 months. When a team begins an "early-start" rule in an effort to valley-fill its activities, that team will typically issue a second final rule 27 months after the first final rule.
2. The NAECA-specified time interval between rulemaking cycles for each product is preserved in the schedule going forward (more important for products with two backlogged standards – *note that if two standards are in backlog, only the first standard is shown on the schedule*). The Department notes that the schedule proposed by the New York State Attorney General's office (including 14 other States and other signatories) also takes into account the NAECA-specified time intervals.
3. Sufficient resources will be available to initiate the proposed schedule in fiscal year 2006 and to implement this schedule in subsequent years until the backlog of rulemakings is addressed.

After DOE bundled backlog products around the basic team-oriented framework, it had few scheduling choices left. The Department's schedule presented in the next subsection shows that DOE will issue one standard for all products in the backlog by June of 2011 (the scheduled backlogged standard may be a first- or second-cycle revision). Furthermore, the Department's schedule meets all mandatory deadlines specified in EPACT 2005.

The Department considered a variety of other scheduling approaches. While the Department heard from stakeholders that energy savings should be an important principle in scheduling the rulemakings, the DOE scheduling approach (which heavily incorporates stakeholder input) allows for few product scheduling choices. In addition, as noted by stakeholders at the workshop, the criterion "energy savings" is not a straightforward concept to implement for scheduling. Prior to conducting a rulemaking and setting a standard, it is unclear how much energy a standard would save for a given product (the savings are bounded between zero and the savings that would be achieved by maximum technology). Therefore, the Department considers this criterion worthy of consideration, but complex and difficult to implement in practice. Energy savings considerations are reviewed in making small adjustments to the schedule after the other scheduling criteria

are implemented. Finally, the Department notes that the proposed schedule is aggressive and will therefore rapidly capture valuable energy savings for the nation.

The Department also heard that it should try to start and finish all backlogged standards rulemakings simultaneously and immediately. In the Department's judgment, this scheduling approach is not sound for the following reasons:

1. Some products have two standards cycles that are backlogged. Therefore, the NAECA time interval should elapse between final rule issuances.
2. If all rulemakings for products in the backlog were run on a concurrent schedule, efficiency improvements would be lost because of comment periods and review times (11 months per rule). Teams dedicated to single rulemakings would result in idle time for many team members. It is instead prudent to employ a team-oriented, valley-filling approach.
3. Senior EE management would face an impossible task if all products in the backlog were to have standards rulemakings conducted concurrently. Their time would be used inefficiently, as would that of stakeholders. Reviewing dozens of large, complex documents simultaneously would be a huge problem and would be counter to DOE quality control efforts.

The Department also received comments that a 30-month timetable should be the maximum for a single rulemaking. However, as explained in section 6, the Department believes that 36 months is the shortest timeline that it can commit to on a repeatable basis (some rulemakings may move faster). Moreover, the Department notes that valley-filling results in each rulemaking team being able to issue a two-rule pair with an average 31.5-month duration, which is not significantly longer than the 30-month target suggested by the joint commenters. Finally, the Department has scheduled "early-start valley-filling" rules that conclude 27 months after a team's previous rule, but have calendar times between framework workshop and final rule in excess of 36 months – the Department is transparent about this approach and believes that the start/stop nature of the "early-start valley-filling" rule is intrinsic to valley-filling, but will accelerate the Department's program-wide rulemaking rate.

7.3 Multi-Year Schedule

Table 11 presents DOE's multi-year schedule. This schedule results in the issuance of one standard for each product with a backlogged standard (i.e., 18 products), plus one standard for each product for which DOE must develop a standard as required by EPACT 2005. This schedule also addresses determination analyses, the distribution transformer test procedure, the residential central air-conditioning test procedure, two test procedures that EPACT 2005 requires DOE to develop, and the test procedure rulemaking which will be conducted *en masse* in response to EPACT 2005.

This schedule does not address second-cycle standards for products that have two standards in the backlog, nor does it address more than one standard for any EPACT 2005 product. This schedule does not address the standards or test procedures that would be necessitated by positive determinations for either high-intensity discharge (HID)

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lamps or small electric motors. The Department fully recognizes that all backlogged standards will need to be scheduled and issued (maintaining the relevant NAECA interval between final rules), and it also plans to stay on-schedule for all EPACT 2005 statutory requirements. Moreover, if positive determinations are made for HID lamps or small electric motors, the Department will schedule test procedure and energy conservation standard rulemakings at the necessary time. Finally, after fiscal year 2011, the Department will again consider scheduling optional rulemakings. No optional rulemakings are reflected in this schedule.

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Table 11 Multi-Year Schedule to Issue One Standard for Each Product in Backlog, and to Develop One Standard for Each Product per EPACT 2005

Rulemaking Team	Rule Type	Product(s)	EPACT 2005, Backlog, Other	Approx. Rule Initiation Date	Final Action Date
Heating Team	Standards	<ul style="list-style-type: none"> Furnaces and Boilers (Residential) [Backlog Cycle 1 including Mobile Home Furnaces, Backlog Cycle 2 for Small Furnaces] 	Backlog	NA	September 2007
		<ul style="list-style-type: none"> Water Heaters (Residential) [Backlog Cycle 2] Direct Heating Equipment [Backlog Cycle 1] Pool Heaters [Backlog Cycle 1] 	Backlog Backlog Backlog	FY2006, Q4	March 2010
Transformers and Motors Team	Determination Analysis	<ul style="list-style-type: none"> Small Electric Motors 	Backlog	NA	June 2006
	Standards	<ul style="list-style-type: none"> Distribution Transformers, MV Dry-Type and Liquid-Immersed 	Backlog	NA	September 2007
		<ul style="list-style-type: none"> Electric Motors, 1-200 HP [Backlog Cycle 1] 	Backlog	FY2008, Q1	June 2011
	Test Procedure	<ul style="list-style-type: none"> Distribution Transformers 	Backlog	NA	April 2006
Lighting Team	Determination Analysis	<ul style="list-style-type: none"> High-Intensity Discharge Lamps 	Backlog	NA	June 2010
	Standards	<ul style="list-style-type: none"> Ceiling Fan Light Kits (other than those with prescribed standards) 	EPACT 2005	NA	January 2007
		<ul style="list-style-type: none"> Incandescent Reflector Lamps [Backlog Cycle 1] Fluorescent Lamps [Backlog Cycle 1] Incandescent General Service Lamps [Backlog Cycle 1] 	Backlog Backlog Backlog	FY2006, Q3	June 2009
		<ul style="list-style-type: none"> Fluorescent Lamp Ballasts [Backlog Cycle 2] 	Backlog	FY2008, Q1	June 2011
Home Appliance Team	Standards	<ul style="list-style-type: none"> Dishwashers (Residential) [Backlog Cycle 2] Ranges and Ovens (Electric and Gas) and Microwave Ovens [Backlog Cycle 1 for Gas, Backlog Cycle 2 for Electric] Dehumidifiers (Residential) [Revision] Clothes Washers (Commercial) [Revision 1] 	Backlog Backlog EPACT 2005 EPACT 2005	FY2006, Q2	March 2009
		<ul style="list-style-type: none"> Clothes Dryers (Residential) [Backlog Cycle 2] Room Air Conditioners [Backlog Cycle 2] 	Backlog Backlog	FY2008, Q1	June 2011
Space Cooling Team	Standards	<ul style="list-style-type: none"> Packaged Terminal Air Conditioners and Heat Pumps 	Backlog	FY2006, Q4	September 2008
		<ul style="list-style-type: none"> Central Air Conditioners and Heat Pumps (Residential) [Backlog Cycle 2] 	Backlog	FY2008, Q2	June 2011
	Test Procedure	<ul style="list-style-type: none"> Central Air Conditioners and Heat Pumps (Residential) 	Other	NA	September 2007

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Rulemaking Team	Rule Type	Product(s)	EPACT 2005, Backlog, Other	Approx. Rule Initiation Date	Final Action Date
Commercial Refrigeration Team	Standards	• Refrigerated Bottle or Canned Beverage Vending Machines	EPACT 2005	FY2006, Q3	August 2009
		• Ice-Cream Freezers, Self-Contained Commercial Refrigerators, Freezers, and Refrigerator-Freezers without Doors, and Remote-Condensing Commercial Refrigerators, Freezers and Refrigerator-Freezers (initial)	EPACT 2005	FY2006, Q2	January 2009
		• Automatic Ice Makers (Commercial) [Revision 1]	EPACT 2005	FY2011, Q3	January 2015
	Test Procedure	• Ice-Cream Freezers, Self-Contained Commercial Refrigerators, Freezers, and Refrigerator-Freezers without Doors, and Remote-Condensing Commercial Refrigerators, Freezers and Refrigerator-Freezers	EPACT 2005	NA	January 2008
Battery Chargers and External Power Supplies Team	Determination Analysis	• Battery Chargers and External Power Supplies	EPACT 2005	NA	August 2008
	Standards	• Battery Chargers and External Power Supplies (Contingent on Determination)	EPACT 2005	FY2008, Q4	August 2011
	Test Procedure	• Battery Chargers and External Power Supplies	EPACT 2005	NA	February 2007
Other EPACT 2005	Test Procedure	• 11 Test Procedures Prescribed by EPACT 2005	EPACT 2005	NA	November 2006

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The DOE program staff will operate in seven rulemaking teams as follows:

Team 1 (Heating): Team 1 is currently completing the residential furnaces and boilers standards rulemaking. In fiscal year 2006 a rulemaking will be initiated that includes standards for residential water heaters, direct heating equipment, and pool heaters.

Team 2 (Transformers and Motors): Team 2 will complete the small electric motors determination analysis (and the test procedure and standards rulemaking will follow if there is a positive determination). In parallel with this work on small electric motors, the team will complete the distribution transformers standards rulemaking for MV dry-type and liquid-immersed transformers. The other two standards rulemakings to be carried about by Team 2 are the two cycles of electric motors (1-200 hp) rulemakings. Note that the second cycle is not in the backlog.

Team 3 (Lighting): Per EPACT 2005, Team 3 will complete a standards rulemaking for ceiling fan light kits (for light kits other than those with prescribed standards) by January 1, 2007. There is insufficient time to conduct a rulemaking that meets all required reviews and comment periods. Since the product class to be regulated is a relatively small portion of the market, DOE hopes to issue a direct final rule for this product to codify the standards prescribed in EPACT 2005 in order to meet the statutory schedule. During the second half of fiscal year 2006, DOE will initiate the first of two cycles of lamp standards rulemakings. In between these cycles, DOE will concentrate efforts on a fluorescent lamp ballast standards rulemaking and completion of the HID determination analysis, taking into consideration the impact of the mercury vapor lamp ballast requirements in EPACT 2005. If the HID determination is positive, the HID standards rulemaking will be bundled with the second round of lamp standards rulemaking (and a test procedure rulemaking for HID lamps will be conducted).

Team 4 (Home Appliances): Team 4 will be analyzing home appliances. Dishwashers and ranges and ovens (gas and electric) and microwave ovens will be bundled with two EPACT 2005 products (dehumidifiers and commercial clothes washers). Clothes dryers and room air conditioners will be bundled as an “early-start valley-filling” rulemaking to the four-product bundle. In turn, the second revisions for standards for both commercial clothes washers and gas ranges and ovens will valley-fill the clothes-dryers and room-AC rule.

Team 5 (Space Cooling): Team 5 will complete the residential-central-air conditioner and heat-pump test procedure rulemaking. The rulemaking for packaged terminal air conditioners and heat pumps will begin in the second half of fiscal year 2006. The standards rulemaking for residential central AC will be an “early-start valley-filling” rule with the packaged terminal air conditioner and heat pump rule.

Team 6 (Commercial Refrigeration): Team 6 will be dedicated to issuing all of the test procedures and standards required by EPACT 2005 for commercial refrigeration products. This effort will be complex and will involve parallel effort on separate

standards rulemakings and test procedures. The Department plans to meet all EPACK 2005 statutory dates.

Team 7 (Battery Chargers and External Power Supplies): Team 7 will be dedicated to the battery-chargers and external-power-supplies rulemaking effort. This effort entails issuing test procedures, holding a scoping workshop, issuing determinations, and potentially issuing standards (dependent upon determinations).

7.4 The Risks of An Even More Accelerated Schedule

In an effort to quickly clear the backlog and to meet all EPACK 2005 deadlines, the current schedule emphasizes the rate at which standards will be issued. While the Department does not intend to sacrifice analysis quality, it will necessarily have to actively manage analysis complexity (see section 6.3). In many cases, stakeholders will welcome this change, but reducing complexity could be perceived as reducing quality and does present the risk of challenges to the Department's regulations that might slow the implementation of the standards.

If the schedule were to be accelerated beyond that proposed by the Department, the Department believes that the risks of overly contentious and potentially flawed rulemakings would be increased to levels not justified by the incremental reductions in the time scheduled to address the backlog. As explained in section 6, for a rulemaking that is not streamlined or expedited, the Department believes that it would be irresponsible to commit to a single rulemaking timetable shorter than 36 months in duration on a repeatable basis. In some cases, the Department may issue Final Rules in advance of the scheduled dates. The Department cannot in good faith commit to a schedule that requires issuance of one standard for each product in the backlog prior to June of 2011.

7.5 Financial Resources Necessary to Implement Schedule

This report documents substantial enhancements to productivity in rulemaking activities that should allow the Department to accomplish more rulemaking activities per dollar of appropriations. The Department's proposed activities represent firm and achievable schedules for very important and complex rulemaking activities that will have significant energy savings benefits for the Nation. The necessary fiscal year 2006 rulemaking activities are covered by already appropriated resources. The Department will formulate its future budget requests to provide the necessary resources to implement the schedule and remain at a high level of output until the backlog of rulemaking activities is addressed.

In addition to financial resources, the Department is identifying and obtaining the human resource needs for expanded rulemaking activity. This will necessarily involve examining critical needs among the Federal workforce in the Office of Energy Efficiency and Renewable Energy, the Office of General Counsel, and the Office of Policy and International Affairs. It will also involve assessing the needs for expert technical assistance from other Federal agencies, such as the National Institute of Standards and Technologies, national laboratories, and other technical contractors. The Department is

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already working in fiscal year 2006 to obtain the needed human resources for expanded rulemaking activities identified in this report.

APPENDIX A. Explanation of Delays to Priority Rules Announced in 2004

A.1 Reporting Requirements

The Conference Report accompanying the Fiscal Year 2006 Energy and Water Development Appropriations Act includes a requirement for an Appliance Standards Program report (Energy and Water Development Appropriations Bill, 2006, Report 109-275) as follows:

Report Requirement. The appliance efficiency standards program, funded within the equipment standards and analysis subaccount, may be the most successful of all federal efficiency programs. The Committee understands that the Department is delayed in meeting legal deadlines for issuing approximately twenty new and updated programs, and that its three highest priority rulemakings will be delayed at least two years. The Committee notes that while the Department is behind in meeting legal deadlines for the issuance of certain rulemakings, its budget request reflects a reduction in resources needed to process such rulemakings. The goal of the Department's own "Process Improvement" rule (61 FR 36974 (July 15, 1996)) is to complete rulemakings within three years, including 18 months from Advanced Notice of Proposed Rulemaking to issuance of a final rule. The Committee strongly urges the Secretary to expedite the process, and requests that the Secretary report to the Committee by December 1, 2005 on plans to accelerate standards rulemakings, including:

- A timeline for work on issuing the three highest priority standards, with an explanation for the additional delays announced in December 2004;
- A plan for addressing the backlog of standards rulemakings that have missed legal or internal deadlines, including a list of the affected products and deadlines, timelines for action on each product, and funding requirements to complete each rulemaking; and
- A description of how the Department will meet the time frame goals of the "Process Improvement" rule, or of how the process should be changed so that the Department can meet the goals.

Although this report to Congress was prepared in response to section 141 of the Energy Policy Act of 2005 (EPACT 2005), Pub. L. 109-58, its contents include the information requested in the Conference Report accompanying the Fiscal Year 2006 Energy and Water Development Appropriations Act.

Section 3 of the report summarizes all of the Department's rulemaking responsibilities and the Department's progress towards meeting its goals. The list of affected products includes all standards mandated by EPCA, as amended, including the provisions in EPACT 2005. The original standards dates (for standards prescribed by statute) and the dates set by law for all updates and revisions are identified. In cases where DOE has completed a rulemaking, the actual dates are shown.

Section 6 describes the Department's plan for addressing the backlog of standards rulemakings. Recent and forthcoming process improvements will increase the program's rulemaking output by increasing the number of products in the active rulemaking process and by shortening the time required to complete rulemakings. The process improvements will enable the Department to meet the time frame goals of the Process Rule.

Furthermore, rather than waiting until a rulemaking is completed before initiating another rulemaking for similar products, the Department will initiate an "early-start valley-filling" rule during the ANOPR comment period. These "early-start valley-filling" rules will take advantage of valley-filling techniques to reduce the time between final rules to 27 months, for a given rulemaking team.

The timeline for work on issuing all standards rulemakings is described in section 7.3. The full-compliance schedule employs all the new and recently implemented process improvements to expeditiously complete the currently active rulemakings and meet all deadlines for the newly covered EPCACT 2005 products. In regard to the standards backlog, the Department's schedule will issue one standard for all products in the backlog by June of 2011 (the scheduled backlogged standard may be a first- or second-cycle revision).

Finally, an explanation for the additional delays announced in December 2004 for issuing the standards for the three priority rules is provided in the following subsections.

A.2 Regulatory Agenda Dates and Delays

In December 2003, the Department published a regulatory agenda (68 FR 72467 (December 22, 2003)) giving publication dates for the ANOPR, NOPR, and final rule for each of the three priority products (i.e., distribution transformers, commercial unitary air-conditioning and residential furnaces and boilers). In December 2004, the Department revised the publication dates in the regulatory agenda (69 FR 72712 (December 13, 2004)) reporting the ANOPR publication date of July 29, 2004, for each of the three priority rules and revising the publication dates for the NOPRs and final rules.

As the December 2003 and 2004 regulatory agendas show, the time period between ANOPR and NOPR increased from 12 months to between 23 and 26 months for the three rules. Similarly, the time between NOPR and final rule increased from between six and eight months to 12 months. The December 2003 schedules had allocated three to four weeks for BT review and six weeks for mandatory concurrence and Assistant Secretary approval. In reality, as experienced in the ANOPR stage of these three priority rules, the time required by the BT/EE program offices for edits and revisions was approximately eight months and the review time required for General Counsel concurrence was approximately an additional eight months.

Based on this experience, the December 2004 regulatory agenda schedules allowed for more time for reviews, edits, and revisions and incorporated a new OMB requirement for a peer review. EE also required a peer review of all programs including the Appliance Standards Program. The following subsections provide greater insight into the causes of delays for the individual rulemakings.

A.2.1 Distribution Transformers

Prior to publishing the Distribution Transformers ANOPR, the amount of time required for BT office edits and revisions, mandatory concurrence, and Secretarial approval amounted to 17 months. The major ANOPR analyses and complete draft of the Federal Register notice were complete in February 2003; however, it was not until October 2003 that the document was formally entered into mandatory concurrence (approximately eight months) and then a further nine months lapsed between that date and publication in the Federal Register on July 29, 2004.

The eight months required for BT/EE edits and revisions was driven by the complexity of the analysis and the corresponding length of time needed to review the analyses and the changes requested as a consequence.

Several factors have contributed to this complexity, which, in turn, significantly lengthens the technical review conducted by the DOE program office.

- Transformers are not presently subject to minimum efficiency standards and there are no available baseline statistics for product efficiency performance;
- There is no DOE test procedure for distribution transformers, and transformer efficiency varies with the loading it is subjected to in the field;
- Distribution transformers consist of three distinct technology types, each requiring separate technical analysis: low-voltage dry, medium-voltage dry, and liquid-immersed types;
- Within these technology types, distribution transformers span a very large range of sizes (i.e., electrical capacities);
- Before EPACT 2005 established a standard for low-voltage dry-type distribution transformers, the Department had developed 115 separate efficiency standard levels for the different transformer types and capacities; and
- Transformers are used by many different customer types which, in accordance with the process rule, require separate economic analysis.

The technical and economic analysis needed to support the development of transformer standards can be appreciated by considering that the analysis consisted of thirteen entirely separate engineering cost-efficiency curves and LCC models. In comparison, the commercial unitary air-conditioning rulemaking included only two distinct analyses and the furnace and boiler rule has six engineering curves and LCC models. Furthermore, these other products have been regulated before so that the underlying market and technology attributes were much more readily available.

A.2.2 Commercial Unitary Air Conditioners and Heat Pumps

Prior to publishing the commercial air-conditioning ANOPR, the amount of time required for BT office edits and revisions, mandatory concurrence, and Secretarial approval amounted to 17 months. The major ANOPR analyses and draft of the Federal Register notice were complete in February 2003 and delivered to the BT project manager for review. The BT project manager provided comments to the CUAC Team over a four-month period. Then, in June 2003, the ANOPR analysis was submitted to the BT

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program manager, and it continued to move up the EE chain over the next three months. The document entered mandatory concurrence in September, approximately seven months after it was entered into review. The notice then required a further ten months in concurrence and Secretarial review before it was published in the Federal Register on July 29, 2004.

During the BT/EE Review, stakeholder review actions and a stakeholder-requested independent review were undertaken which caused modifications and delays in the schedule.

- In early 2003, in anticipation of publishing the ANOPR, the Department released draft analysis for public review. In response, the Air-Conditioning and Refrigeration Institute (ARI) and Lennox Industries wrote a comment which raised several significant analytical issues. The Department decided these issues should be the object of a peer review which should be conducted by a team of experts not previously associated with the rulemaking.
- In August 2003, after considering the stakeholder comments about the technical analysis, DOE contracted for an independent review team to prepare an independent assessment of significant comments received, and the overall methodology, assumptions, and data used in the Technical Support Document for the proposed ANOPR.

This independent review extended the BT/EE concurrence to seven months, but the stakeholder and independent review process that BT engaged in likely enabled the consensus agreement that followed. Mandatory concurrence added ten months to the review process for a total of 17 months of review prior to publication of the ANOPR.

A.2.3 Residential Furnaces and Boilers

The BT edits and revisions on this rulemaking took 13 months. Mandatory concurrence added seven months to the review for a total of 20 months. The delays to the BT reviews can be attributed to numerous rounds of public consultations and to revisiting prior decisions that impacted the rulemaking analysis and associated documents. Many of these consultations were related to the concerns expressed by manufacturers about the costs and safety of venting systems for non-weatherized gas furnaces above 80 percent AFUE. Another area of significant interest involved the Department's authority to regulate the electricity consumption of furnaces. Specific examples of stakeholder consultations include:

- The Department held a public workshop on May 8, 2002, to receive comments on venting installation, other venting issues, and to discuss the Department's research concerning venting systems.
- In August 2002, GAMA convened a meeting to discuss approaches for analyzing electricity use in furnaces. The Department, GAMA, and the American Council for an Energy-Efficient Economy (ACEEE) presented its ideas on how to address

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this issue. Following this meeting, DOE reconsidered its authority to impose a standard that limits electricity consumption in residential furnaces and boilers.

The major ANOPR analyses were completed in November 2002 and delivered to the DOE project manager for review, while the analysis team completed work drafting the Federal Register notice and TSD. Over the course of the following 13-month review, a number of BT/EE-1/GC/PI decisions were made that impacted the rulemaking schedule. This included decisions about the rule's priority, the regulation of electricity consumption, regional standards and the need for additional analysis on the cost and safety of venting systems. Some of the key decisions made which impacted the analysis include:

- In December 2002, the Department reconsidered its legal authority to regulate electricity consumption in residential furnaces and boilers, based on NAECA.
- In February 2002, DOE decided to revise the analysis of venting costs and initiated the development of a venting cost-model based on the RS Means installation-cost manuals.
- As the preliminary analysis indicated that no candidate standard level was likely to meet the criteria specified in law, in early 2003 DOE initiated the drafting of a notice of reprioritization. The purpose of the notice of reprioritization was to inform the public that the Department intended to suspend the rulemaking activities for residential furnaces and boilers, and to provide interested persons and entities with an opportunity to comment.
- The May 2003 semiannual regulatory agenda announced that the Department was reclassifying this rulemaking action as low priority, pending further review.
- In July 2003, DOE decided to rescind efforts for the reprioritization notice and decided to solicit additional comments on issues regarding the feasibility and safety of 81 percent modulating furnaces and of other product classes as needed.

After completing the review and necessary revisions, the notice entered mandatory concurrence in December 2003. Thus, prior to publication of the furnaces and boilers ANOPR, the time needed for the BT office revisions and mandatory concurrence totaled 20 months.