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May 27, 2010

MEMORANDUM

TO: Power Committee

FROM: Tom Eckman and Charlie Grist

SUBJECT: Update on Federal Standards Activities

Staff will provide a brief update on the status of regional activities to promote the adoption of federal efficiency standards. This agenda item is intended to provide an opportunity for members to discuss actions that could be taken to develop a more coordinated regional effort in this area.

Staff drafted a white paper on the federal standards process for the board of the Northwest Energy Efficiency Alliance (NEEA). NEEA is considering actions it can take to support the Northwest interests in the federal standards process. The paper is attached.

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May 18, 2010

Federal Appliance and Equipment Efficiency Standards
Their Historical Impact on Northwest Energy Efficiency Achievements
And Potential Role for Achieving Additional Energy Savings

The purpose of this paper is to provide an overview of the history federal standards, their impact on the energy savings achieved in the region and the potential savings from rulemakings underway to adopt new and/or revise existing standards.

Statutory History - Congress charged the US Department of Energy with establishing and maintaining a process for regularly updating energy efficiency standards for appliances, heating and cooling equipment, motors and a variety of other energy consuming products. The Energy Policy and Conservation Act (EPCA) of 1975 established test procedures and conservation targets and labeling for major residential appliances. It also called upon the newly formed Department of Energy (DOE) to set standards for these appliances if the targets were not met. Three years later Congress enacted the National Energy Policy and Conservation Act (NECPA) that amended EPCA require standards. Nearly a decade past before Congress enacted and President Reagan signed into law the National Appliance Energy Conservation Act (NAECA), the first national minimum efficiency standards for appliances. NAECA not only establish federal minimum standards for water heaters, clothes washers, refrigerators and other appliances, it set a schedule for the DOE to follow that was designed to ensure that these standards would be updated on a regular basis. NAECA not only sets forth federal *minimum* efficiency standards, but it also preempts individual states from adopting regulations, including requirements in their building codes, which exceed the requirements of the federal standards. This means, that federal standard set both the *minimum* efficiency appliances, lighting and equipment must achieve in order to be sold and they establish the *maximum* efficiency that can be required by state codes or other regulations.

Since 1987 NAECA has been amended four times to include additional products and to require DOE to maintain a more consistent update schedule. The most recent amendments to NAECA were included in the Energy Independence and Security Act of 2007 (EISA). Nearly 40 difference major product categories are now covered by these federal appliance and equipment standard. Table 1 provides a list of the major product categories now covered by these standards and for which states are preempted from regulating.

Table 1 - Major Product Categories Covered by Federal Appliance, Lighting and Equipments Standards

<ul style="list-style-type: none"> ■ Battery Chargers and External Power Supplies ■ Ceiling Fan Light Kits ■ Residential & Commercial Clothes Washers ■ Commercial Ice Makers ■ Commercial Packaged Air Conditioners and Heat Pumps ■ Commercial Packaged Heating and Cooling Equipment ■ Residential & Commercial Refrigerators & Freezers ■ Commercial Warm Air Furnaces ■ Residential & Commercial Water Heaters and Unfired Water Heater Tanks ■ Compact Fluorescent Lamps ■ Dehumidifiers ■ Direct heating equipment ■ Electric Motors ■ Exit Signs ■ General Service Fluorescent Lamps and Ballasts ■ General Service Incandescent Lamps ■ Incandescent Reflector Lamps ■ Low & Medium Voltage Transformers 	<ul style="list-style-type: none"> ■ Metal Halide Lamps Fixtures ■ Pool heaters ■ Refrigerated Beverage Vending Machines ■ Residential Central Air Conditioners and Heat Pumps ■ Residential Clothes Dryers ■ Residential Dishwashers ■ Residential Furnaces & Boilers ■ Residential Ranges and Ovens ■ Room Air Conditioners ■ Single Packaged Vertical Air Conditioners and Heat Pumps ■ Torchiers ■ Traffic and Pedestrian Signal ■ Walk-in Coolers and Walk-In Freezers
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Contribution to Regional Energy Savings - Since the first Federal appliance and equipment standards took effect in 1988 they have been a significant contributor to both regional and national energy savings. The Council estimates that the cumulatively regional savings from federal standards through 2008 were just under 800 average megawatts. Savings from these standards now account for over twenty percent of the 4000 average megawatts of energy savings achieved in the region since 1978.

Looking to the future, the Council 6th Plan estimates that between forty to forty-five percent of the roughly 6000 average megawatts of cost-effective conservation identified for acquisition over the next twenty years could be captured through improvements in state energy codes and federal standards. The potential savings from improvements in federal standards represent *over three-quarters* of the combined potential from improved state energy codes and federal standards.

Regional Involvement in Federal Standards - The Council has actively participated in DOE's rulemaking proceedings since 1987. Council staff participates in technical hearings on proposed standards and provides analysis in support of adopting standards at the levels of efficiency

identified as being cost-effective in the Council plan. Council staff also participates with other national organizations (e.g., NEEP, ACEEE, NRDC, California Energy Commission) and utilities from outside the region in negotiations with manufacturers to develop consensus standards that are submitted to DOE for consideration. Since NEEA was formed in 1996 it has also provided assistance, in the form of both contracts for technical analysis as well as procuring the services of technical consultants to participate in the DOE rulemaking processes. However, regional utilities have not historically participated in the DOE standards setting process.

Timing - Since the adoption of NAECA in 1987 the DOE has failed to meet the update schedule required by Congress both in that legislation and in its amendments. As a result, in July of 2005 fifteen states, including New York and California and three public interest groups sued DOE for failure to comply with congressionally mandated standards update schedules. In December of 2005, DOE signed a consent decree placing it under a court supervised to eliminate its standards backlog within five years. In January 2006, DOE adopted a 5-year plan to address both the backlog and new standards rulemakings required by the Energy Policy Act of 2005 and EISA. DOE has committed to issuing one standard for all backlog products by June 2011, while meeting all the EPACT 2005 deadlines. This translates into completing rulemakings on 18 products and updating numerous test procedures.

Because of DOE's commitment to comply with the court supervised schedule, federal standards rulemaking activity is occurring at a pace that is six-fold faster than since NAECA was enacted in 1987. This offers the Council, NEEA and the region's utilities an unprecedented opportunity to secure cost-effective efficiency gains through federal standards rather than through utility programs. For example, by the end of 2011 DOE is scheduled to issue final standards for, refrigerators, freezers, central air conditioners and heat pumps, clothes washers and room air conditioners. The DOE rulemaking schedule for standards and test procedures for the remainder of 2010 appears in Tables 2 and 2a Table 3 provides the DOE's rulemaking schedule for all products through 2016.

Table 2 - US Department of Energy Appliance Standards Rulemaking Schedule for 2010¹

Date	Product	Rulemaking Stage	Status
January	Metal Halide Lamp Fixtures	Framework workshop	Completed
	Clothes Dryers and Room A/C**	Preliminary analysis	Completed
	Central A/C and Heat Pumps**	Preliminary analysis	Completed
	Fluorescent Lamp Ballasts**	Preliminary analysis	Completed
	Commercial Refrigeration Equipment*	Framework workshop	Waiting
	Electric Motors*	Framework workshop	Waiting
February	Small Electric Motors	Final rule	Completed
March	Water Heaters, Direct Heaters, and Pool Heaters	Final rule	Completed
	Battery Chargers and External Power Supplies	Preliminary analysis	Waiting
May	Refrigerators and Freezers	Proposed rule	
June	Clothes Washers	Preliminary analysis	
	HID Lamps	Final determination	
	Microwave Ovens- Standby and Off Mode	Supplemental proposed rule	
	Incandescent Reflector Lamps (Certain ER, BR, and Small Diameter)*	Preliminary analysis	
	Televisions*	Framework workshop	
July	Walk-In Coolers and Freezers	Preliminary analysis	Completed
August	Metal Halide Lamp Fixtures	Preliminary analysis	
September	Residential Furnaces	Proposed rule	
October	Central A/C and Heat Pumps	Proposed rule	
	Clothes Dryers and Room A/C	Proposed rule	
November	Fluorescent Lamp Ballasts	Proposed rule	
December	Battery Chargers and External Power Supplies	Proposed rule	
	External Power Supplies—Non-Class A	Final determination	
	Refrigerators and Freezers	Final rule	
	Furnace Fans*	Framework workshop	

*ASAP estimate

**Due in 2009

¹ Prepared by the Appliance Standards Awareness Project (ASAP). Last updated April 19, 2010.

Table 2a - US Department of Energy Appliance Test Procedure Rulemaking Schedule for 2010²

Date	Product	Rulemaking Stage	Status
January	Walk-In Coolers and Freezers	Proposed rule	Completed
	Clothes Dryers and Room A/C**	Proposed rule	Waiting
	Clothes Dryers and Room A/C- Standby and Off Mode**	Supplemental proposed rule	Waiting
	Central A/C and Heat Pumps**	Proposed rule	Waiting
	Fluorescent Lamp Ballasts**	Proposed rule	Completed
	Refrigerators and Freezers**	Proposed rule	Waiting
	Water Heaters, Direct Heaters, and Pool Heaters- Standby and Off Mode**	Proposed rule	Waiting
	Electric Motors**	Supplemental proposed rule	Waiting
February	Metal Halide Lamp Ballasts	Final rule	Completed
March	Battery Chargers and External Power Supplies	Proposed rule	Completed
	Microwave Ovens- Standby and Off Mode	Supplemental proposed rule	Waiting
	Water Heaters, Direct Heaters, and Pool Heaters- Standby and Off Mode	Final rule	Waiting
April	Clothes Washers	Proposed rule	
	Clothes Washers- Standby and Off Mode	Proposed rule	
May	Refrigerators and Freezers	Final rule	
June	Dishwashers, Ranges and Ovens, and Dehumidifiers- Standby and Off Mode	Proposed rule	
September	Electric Motors	Final rule	
	Furnaces and Boilers- Standby and Off Mode	Final rule	
	Microwave Ovens- Standby and Off Mode	Final rule	
	Walk-In Coolers and Freezers	Final rule	
October	Battery Chargers and External Power Supplies	Final rule	
	Clothes Dryers and Room A/C	Final rule	
	Clothes Dryers and Room A/C- Standby and Off Mode	Final rule	

**Due in 2009

² Prepared by the Appliance Standards Awareness Project (ASAP). Last updated April 19, 2010.

Table 3 - US Department of Energy Appliance Standards Rulemaking Schedule Through 2017

Product Covered	Initial Legislation	Last Standard Issued	Effective Date	Issued By	Updated DOE Standard Due	Potential Effective Date
Residential Products						
Central AC and Heat Pumps	NAECA 1987	2001	2006	DOE	2011	2016
Furnaces	NAECA 1987	2007	2015	DOE	2011	2015
Boilers	NAECA 1987	2007	2012	Congress	2015	2018
Furnace Fans	EPACT 2005	None	None	N/A	2013	TBD
Refrigerators & Freezers	NAECA 1987	1997	2001	DOE	2010	2014
Clothes Dryers	NAECA 1987	1991	1994	DOE	2011	2014
Water Heaters	NAECA 1987	2001	2004	DOE	2010	2013
Single-Voltage External Power Supplies	EPACT 2005	2007	2008	Congress	2011	2013
Microwave Ovens	NAECA 1987	None	None	DOE	2009	2012
Ranges and Ovens (electric)	NAECA 1987	None	None	DOE	2017	2020
Ranges and Ovens (gas)	NAECA 1987	2009	2012	DOE	2017	2020
Dishwashers	NAECA 1987	2007	2010	Congress	2015	2018
Room AC	NAECA 1987	1997	2000	DOE	2011	2014
Pool Heaters	NAECA 1987	1987	1990	Congress	2010	2013
Dehumidifiers	EPACT 2005	2007	2012	Congress	2015	2018
Direct Heating Equipment	NAECA 1987	1987	1990	DOE	2010	2013
Clothes Washers	NAECA 1987, EPACT 2005	2007	2011	Congress	2011	2015
Plumbing Products (Showerheads, Aerators & Toilets)	EPACT 1992	1992	1994	Congress		
Battery Chargers	EPACT 2005	None	None	N/A	2011	2014
Televisions	None					
Commercial Products						
Distribution Transformers - Low Voltage	EPACT 2005	2005	2007	Congress	2013	2016
Distribution Transformers - Medium Voltage	EPACT 1992	2007	2010	DOE	2015	2018
Distribution Transformers - Liquid Immersed	EPACT 1992	2007	2010	DOE	2015	2018
Electric Motors	EPACT 1992	2007	2010	Congress	2015	2018
Commercial Refrigeration -	EPACT 2005	2009	2012	N/A	2013	2016

Supermarket (built-up) Refrigerators & Freezers						
Commercial Refrigeration - Refrigerator and Freezer Cases without Doors	EPACT 2005	2009	2012	N/A	2013	2016
Commercial Refrigeration - Ice Cream Freezers	EPACT 2005	2009	2012	N/A	2013	2016
Commercial Refrigeration - Reach-In Refrigerators & Freezers	EPACT 2005	2005	2010	Congress	2013	2016
Commercial Refrigeration - Walk-In Refrigerators & Freezers	EISA 2007	2007	2009	Congress	2012	2015
Vending Machines	EPACT 2005	None	None	N/A	2009	2012
Automatic Commercial Ice Makers	EPACT 2005	2005	2010	Congress	2010	2015
Commercial AC	EPACT 1992	2005	2010	Congress	2013	2016
Packaged Terminal AC and Heat Pumps	EPACT 1992	2008	2010/12	Congress	2016	2019
Water- and Evaporatively-Cooled and Water Source Commercial Packaged AC & Heating Equipment	EPACT 1992	2009	2011	DOE	2017	2020
Commercial 3-Phase Central AC	EPACT 1992	2007	2008	Congress	2015	2018
Commercial Clothes Washers	EPACT 2005	2005	2007	Congress	2010	2013
Commercial Warm Air Furnaces	EPACT 1992	2001	2003	DOE	2009	2012
Commercial Boilers	EPACT 1992	2009	2012	Congress	2017	2020
Unit Heaters	EPACT 2005	2005	2008	Congress	2013	2016
Commercial Water Heaters	EPACT 1992	2001	2003	DOE	2009	2012
Pre-Rinse Spray Valves	EPACT 2005	2005	2006	Congress	2013	2016
Lighting Products						
General Service Incandescent Lamps	EPACT 1992	2007	2012	Congress	2017	2020
Fluorescent Lamp Ballasts	NAECA 1987, EPACT 2005	2000	2005	DOE	2011	2014
Linear Fluorescent Lamps	EPACT 1992	2009	2012	Congress	2017	2020
Incandescent Reflector	EPACT 1992	2009	2012	Congress	2017	2020

Lamps (IRL)						
65 watt BR and ER IRL's and IRL's < 50 watts	None	None	None	N/A	2010	2013
General HID Lamps	EPACT 1992	None	None	DOE	TBD	
Metal Halide Lamp Fixtures	EISA 2007	2007	2009	Congress	2012	2015
Mercury Vapor Lamp Ballasts	EPACT 2005	2005	2008 (ban)	Congress	2013	2016
Ceiling Fan Light Kits	EPACT 2005	2005	2007	Congress	2013	2016
Ceiling Fans	EPACT 2005	2005	2007	Congress	2013	2016
Compact Fluorescent Lamps	EPACT 2005	2005	2006	Congress	2013	2016