APPENDIX

The following text was filed with a Notice of Adoption pertaining to Minimum Energy Efficiency Standards, I.D. No. ERD-40-06-00002-A published in this issue of the *State Register*.

Section 506.4 (a) (2) is amended to read as follows:

(2) For replacement T8 fluorescent lamp ballasts powering 32 watt or 59 watt lamps that are designed to operate at nominal input of 120 or 277 volts and have input current frequencies of 60 Hertz, the minimum energy efficiency standards shall be the minimum ballast efficacy factors set forth in Table 5.1 determined in accordance with the test procedures set forth in 10 Code of Federal Regulations (CFR) Part 430, Subpart B, Appendix Q [(last amended April 24, 1991)] (see section 506.6 of the Part). For fluorescent lamp ballasts in new construction, no T12 ballast shall be purchased and the minimum energy efficiency standards for T8 ballasts powering 32 watt or 59 watt lamps that are designed to operate at nominal input of 120 or 277 volts and have input current frequencies of 60 Hertz shall be the ballast efficacy factors set forth in Table 5.1 determined in accordance with the test procedures set forth in 10 Code of Federal Regulations (CFR) Part 430, Subpart B, Appendix Q [(last amended April 24, 1991)] (see section 506.6 of this Part).

The remainder of the paragraph remains unchanged.

Section 506.4 (b) (3) is amended to read as follows:

(3) The minimum energy efficiency standards for residential central air conditioners and heat pumps shall be the levels set forth in Table 5.2 determined in accordance with the test procedures set forth in 10 Code of Federal Regulations (CFR) Part 430, Subpart B, Appendix M [(last amended February 7, 1989)] (see section 506.6 of this Part). Residential central air conditioners and the cooling mode for residential heat pumps shall meet the applicable seasonal energy efficiency ratio. The heating mode for residential heat pumps shall meet the applicable heating seasonal performance factor.

The remainder of the paragraph remains unchanged.

Section 506.4 (c) (4) is amended to read as follows:

(4) The minimum energy efficiency standards for commercial central air conditioners and heat pumps shall be the levels set forth in Table 5.3 determined in accordance with the test procedures set forth in such Table 5.3 and as referenced in section 506.6 of this Part. Commercial central air conditioners and the cooling mode of commercial heat pumps of less than 65,000 Btu per hour shall meet the applicable seasonal energy efficiency ratio and energy efficiency ratio. The heating mode of commercial heat pumps of less than 65,000 Btu per hour shall meet the applicable heating seasonal performance factor. Commercial central air conditioners and the cooling mode of commercial heat pumps equal to or greater than 65,000 Btu per hour shall meet the applicable energy efficiency ratio, and when they have capacity modulation, shall meet the applicable integrated part-load value. The heating mode of commercial heat pumps equal to or greater than 65,000 Btu per hour shall meet the applicable coefficient of performance.

Table 5.3: Minimum Energy Efficiency Standards for Commercial Central Air Conditioners (AC) and Heat Pumps (HP)				
Cooling capacity	Sub-category		Efficiency Level	Test Procedure for determining efficiency level
Type: Air Source, 3 Phase				
<65,000 Btu/h	Split-System	AC	13 SEER[a], 11 EER[c]	ARI[b] 210/240[-94]
		HP	13 SEER[a], 11 EER[c], 8 HSPF[d]	
	Single Package	AC	12 SEER[a], 10.5 EER[c]	ARI[b] 210/240[-94]
		HP	12 SEER[a], 10.5 EER[c] 7.6 HSPF[d]	
Type: Air Source				
≥65,000 Btu/h and <135,000 Btu/h	AC		11 EER[c], 11.4 IPLV[e]	ARI[b] [210/240-94]340/360
	HP		10.1 EER[c],10.4 IPLV[e], 3.2 COP[f]	
≥135,000 Btu/h and <240,000 Btu/h	AC		10.8 EER[c], 11.2 IPLV[e]	ARI[b] 340/360[-93]
	HP		9.3 EER[c], 9.5 IPLV,[e] 3.1 COP	
≥240,000 Btu/h and <760,000 Btu/h	AC		9.5 EER[c], 9.7 IPLV	ARI[b] 340/360[-93]
	HP		9 EER[c], 9.2 IPLV[e], 3.1 COP	
≥760,000 Btu/h	AC		9.2 EER[c], 9.4 IPLV[e]	ARI[b] 340/360[-93]
	HP		9 EER[c], 9.2 IPLV[e], 3.1 COP	
Type: Water Cooled, Evaporatively Cooled, and Water-Source				
<17,000 Btu/h	AC		12.1 EER[c]	ARI[b] 210/240[-94] (For Water-Source use ANSI[h]/ARI[b]/ASHRAE[i]/ISO[g] -13256-1)
	HP		11.2 EER[c], 4.2 COP[f]	
≥17,000 Btu/h and <65,000 Btu/h	AC		12.1 EER[c]	ARI[b] 210/240[-94] (For Water-Source use ANSI[h]/ARI[b]/ASHRAE[i]/ISO[g] -13256-1)
	HP		12 EER[c], 4.2 COP[f]	
≥65,000 Btu/h and <135,000 Btu/h	AC		11.5 EER[c]	ARI[b] [210/240-94]340/360 (For Water-Source use ANSI[h]/ARI[b]/ASHRAE[i]/ISO[g] -13256-1)
	HP		12.8 EER[f], 4.5 COP[f]	
≥135,000 Btu/h and <240,000 Btu/h	AC		11 EER[c]	ARI[b] 340/360[-93]
≥240,000 Btu/h	AC		11 EER[c], 10.3 IPLV[e]	ARI[b] 340/360[-93]
Type: Ground water-source				
<135,000 Btu/h	HP		16.2 EER[c], 3.6 COP[f]	ANSI[n]/ARI[b]/ASHRAE[i]/ISO[g] -13256-1

Table 5.3: Minimum Energy Efficiency Standards for Commercial Central Air Conditioners (AC) and Heat Pumps (HP)			
Cooling capacity	Sub-category	Efficiency Level	Test Procedure for determining efficiency level
Type: Ground source			
<135,000 Btu/h	HP	14.1 EER[c], 3.3 COP[f]	ANSI[n]/ARI[b]/ASHRAE[i]/ISO[g] -13256-1

[a] *SEER* ("Seasonal Energy Efficient Ratio") means the total cooling output of a central air conditioner or heat pump in Btus during its normal annual usage period for cooling divided by the total electric energy input in watt-hours during the same period.

[b] *ARI* means the Air-Conditioning & Refrigeration Institute.

[c] *EER* ("Energy Efficiency Ratio") means the ratio of net cooling capacity in BTUs per hour to the total rate of electric input in watts, under designated operating conditions.

[d] *HSPF* ("Heating Seasonal Performance Factor") means the total heating output of a heat pump during its normal annual usage period for heating divided by the total electric energy input during the same period.

[e] *IPLV* ("Integrated Part-Load Value") means a single number figure of merit based on part-load EER, COP, or kilowatt per ton expressing part-load efficiency for air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities for the equipment.

[f] *COP* ("Coefficient of Performance") means a unitless ratio of the rate of heat removal or heat delivery to the rate of energy input, in consistent units, for a complete refrigerating or heat pump system under designated operating conditions.

[g] *ISO* means the International Standards Organization.

[h] *ANSI* means the American National Standards Institute.

[i] *ASHRAE* means the American Society of Heating, Refrigerating, and Air-Conditioning Engineers.

Section 506.4 (d) (3) is amended to read as follows:

(3) The minimum energy efficiency standards for packaged terminal air conditioners and heat pumps shall be the levels set forth in Table 5.4 determined in accordance with the test procedures set forth in Air-Conditioning & Refrigeration Institute Standard 310/380[-93] (see section 506.6 of this Part). Packaged terminal air conditioners and the cooling mode of packaged terminal heat pumps shall meet the applicable energy efficiency ratio. The heating mode of packaged terminal heat pumps shall meet the applicable coefficient of performance.

The remainder of the paragraph remains unchanged.

Section 506.4 (e) (2) is amended to read as follows:

(2) The minimum energy efficiency standards for room air conditioners shall be the levels set forth in Table 5.5 determined in accordance with the test procedures set forth in 10 Code of Federal Regulations (CFR) Part 430, Subpart B, Appendix F [(last amended June 29, 1979)] (see section 506.6 of this Part). The minimum efficiency standards set forth in Table 5.5 shall apply solely to room air conditioners without reverse cycles, but with louvers.

The remainder of the paragraph remains unchanged.

Section 506.4 (f) is amended to read as follows:

(f) Electric Motors

(1) "Electric motor" means a machine which converts electrical power into rotational mechanical power and which:

(i) is a general purpose motor, including but not limited to motors with explosion-proof construction; "General purpose motor" means any motor which is designed in standard ratings with either: (A) Standard operating characteristics and standard mechanical construction for use under usual service conditions, such as those specified in NEMA Standards Publication MG 1[-2003] (see section 506.6 of the Part), paragraph 14.02, "Usual Service Conditions," and without restriction to a particular application or type of application; or (B) Standard operating characteristics or standard mechanical construction for use under unusual service conditions, such as those specified in NEMA Standards Publication MG 1[-2003] (see section 506.6 of the Part), paragraph 14.03, "Unusual Service Conditions," or for a particular type of application, and which can be used in most general purpose applications.

(ii) is a single-speed, induction motor;

(iii) is rated for continuous duty operation, or is rated duty type S1;

(iv) contains a squirrel-cage or cage rotor, and has foot-mounting with flanges or detachable feet;

(v) is built in accordance with NEMA T-frame dimensions, or International Electrotechnical Commission (IEC) metric equivalents;

(vi) has performance in accordance with NEMA Design A or B characteristics, or equivalent designs such as IEC Design N; and

(vii) operates on polyphase alternating current 60-Hertz sinusoidal power; and (A) is rated 230 volts or 460 volts, or both, including any motor that is rated at multi-voltages that include 230 volts or 460 volts, or (B) can be operated on 230 volts or 460 volts, or both.

(2) The minimum energy efficiency standards for open and totally enclosed fan cooled (TEFC) electric motors used in general purpose applications shall be the levels set forth in Table 5.6. These levels are the same levels identified in the NEMA Premium™ Efficiency Electric Motors Program. The efficiency of electric motors is to be determined in accordance with the procedures set forth in 10 Code of Federal Regulations (CFR) Part 431, Subpart B, [Section 431.24] Appendix B (see section 506.6 of this Part).

The remainder of the paragraph remains unchanged.

Section 506.4 (h) (2) is amended to read as follows:

(2) The minimum efficiency standards for commercial water heaters shall be the levels set forth in Table 5.8. determined in accordance with the test procedures set forth in ANSI Z21.10.3[-2001] (see section 506.6 of this Part) with the following modification to the Method of Test for STANDBY LOSS described in section 2.10: the duration of the test shall be the shorter of either 1) until the first cutout following 24 hours from the initiation of data collection or 2) until 48 hours from the initiation of data collection if the water heater is not in the heating mode at that time.

The remainder of the paragraph remains unchanged.

Section 506.4 (j) is amended to read as follows:

(j) Commercial Refrigeration

(1) "Commercial refrigerators and freezers" means reach-in cabinets, pass-through cabinets, roll-in cabinets, and roll-through cabinets that have less than 85 cubic feet of capacity and that are not walk-in models or consumer products regulated under the [National Appliance Energy Conservation Act of 1987 (Public Law 100-12)]Energy Policy and Conservation Act, 42 U.S.C. [6291-6307] (see Section 506.6 of this Part).

(i) "Reach-in cabinet" means a commercial refrigerator, commercial refrigerator-freezer, or commercial freezer with hinged or sliding doors or lids, but excluding roll-in or roll-through cabinets and pass through cabinets.

(2) The minimum efficiency standards for commercial refrigerators and freezers shall be the levels set forth in Table 5.10 determined in accordance with the test procedures set forth in ASHRAE [117]72 (see section 506.6 of this Part). These standards apply only to solid door products.

The remainder of the paragraph remains unchanged.

Section 506.4 (k)(2) is amended to read as follows:

(2) The minimum efficiency standards for fluorescent luminaires shall be the levels set forth in Table 5.11 determined in accordance with the test procedures set forth in NEMA LE5[-2001] (see section 506.6 of this Part).

The remainder of the paragraph remains unchanged.

NYSERDA Part 506, Purchase of Energy Efficient Products, Section 506.4 Minimum Energy Efficiency Standards shall be amended to add new subdivisions (n), (o), (p), and (q) as follows:

(n) Furnaces and Boilers

(1) "Residential Furnace or Boiler" means a product which utilizes single-phase electric current or DC current in conjunction with natural gas, propane, or home heating oil, and which:

(i) Is designed to be the principal heating source for the living space of a residence;

(ii) Is not contained within the same cabinet with a central air conditioner whose rated cooling capacity is above 65,000 Btu per hour; and either

(iii) Is a low pressure steam or hot water boiler that has a heat input rate of less than 300,000 Btu per hour; or

(iv) Is a forced-air central furnace that has a heat input rate of less than 225,000 Btu per hour.

(2) "Commercial packaged boiler" means a type of boiler that has a capacity, (rated maximum input) of 300,000 Btu per hour (Btu/hr) or more, and which:

(i) To any significant extent, is distributed in commerce for heating or space conditioning applications, or for service water heating, in buildings;

(ii) Is designed to operate at or below a steam pressure of 15 psig, or at or below a water pressure of 160 psig and a temperature of 250F, or under both of these sets of conditions and to be capable of supplying either steam or hot water; and

(iii) Is shipped complete with heating equipment, mechanical draft equipment and automatic controls; usually shipped in one or more sections and does not include a boiler that is custom designed and field constructed. If the boiler is shipped in more than one section, the sections may be produced by more than one manufacturer, and may be originated or shipped at different times and from more than one location.

(3) The minimum efficiency standards for residential furnaces shall be the levels set forth in Table 5.13 determined in accordance with the test procedures set forth in 10 Code of Federal Regulations (CFR) part 430, Subpart B, Appendix N (see section 506.6 of this Part).

Table 5.13: Minimum Energy Efficiency Standards: Residential Furnaces

Gas-Fired (<225,000 Btu/hr)		
Weatherized	Non-Weatherized	Mobile Homes
90% AFUE[a]	90% AFUE[a]	90% AFUE[a]

[a] AFUE (Annual Fuel Utilization Efficiency) means the ratio of annual output energy to annual input energy as developed in accordance with the requirements of U.S Department of Energy 10CFR Part 430

(4) The minimum efficiency standards for residential boilers shall be the levels set forth in Table 5.14 determined in accordance with the test procedures set forth in 10 Code of Federal Regulations (CFR) part 430, Subpart B, Appendix N (see section 506.6 of this Part).

Table 5.14: Minimum Energy Efficiency Standards: Residential Boilers

Gas-Fired (<300,000 Btu/hr)		Oil-Fired (<300,000 Btu/hr)	
Steam	Hot Water	Steam	Hot Water
80% AFUE[a]	85% AFUE[a]	85% AFUE[a]	85% AFUE[a]

[a] AFUE (Annual Fuel Utilization Efficiency) means the ratio of annual output energy to annual input energy as developed in accordance with the requirements of U.S Department of Energy 10CFR Part 430

(5) The minimum efficiency standards for commercial boilers shall be the levels set forth in Table 5.15 determined in accordance with the test procedures set forth in 10 Code of Federal Regulations (CFR) part 431, Subpart E (see section 506.6 of this Part).

Table 5.15: Minimum Energy Efficiency Standards: Commercial Boilers	
Gas-Fired (≥300,000 Btu/hr)	Oil-Fired (≥300,000 Btu/hr)
80% Thermal Efficiency	83% Thermal Efficiency

(o) Washing Machines

(1) "Residential Clothes Washer" means a consumer product designed to clean clothes, utilizing a water solution of soap and/or detergent and mechanical agitation or other movement.

(2) "Commercial Clothes Washer" means a soft-mounted front-loading or soft-mounted top-loading clothes washer that is designed for use in applications in which the occupants of more than one household will be using the washing machine, such as multi-family housing common areas, coin laundries and/or other commercial applications, and has a clothes container compartment which:

(i) For horizontal-axis clothes washers, is not more than 3.5 cubic feet; and

(ii) For vertical-axis clothes washers, is not more than 4.0 cubic feet

(3) The minimum efficiency standards for residential and commercial clothes washers shall be the levels set forth in Table 5.16 determined in accordance with the test procedures set forth in 10 Code of Federal Regulations (CFR) part 430, Subpart B, Appendix J1 (see section 506.6 of this Part).

Table 5.16: Minimum Energy Efficiency Standards: Residential and Commercial Clothes Washers	
Minimum Modified Energy Factor[a] (ft3/kwh per cycle)	Maximum Water Factor[b] (gals/ft3)
1.80	7.5

[a] Modified Energy Factor means the quotient of the cubic foot (or liter) capacity of the clothes container divided by the total clothes washer energy consumption per cycle, with such energy consumption expressed as the sum of the machine electrical energy consumption, the hot water energy consumption, and the energy required for removal of the remaining moisture in the wash load.

[b] Water Factor means the quotient of the total weighted per-cycle water consumption divided by the capacity of the clothes washer.

(p) Dishwashers

(1) "Dishwasher" means a consumer product, equal to or greater than 22 inches in exterior width, that is a cabinet-like appliance which with the aid of water and detergent, washes, rinses, and dries (when a drying process is included) dishware, glassware, eating utensils, and most

cooking utensils by chemical, mechanical and/or electrical means and discharges to the plumbing drainage system.

(2) The minimum efficiency standards for dishwashers shall be the levels set forth in Table 5.12 determined in accordance with the test procedures set forth in 10 Code of Federal Regulations (CFR) part 430, Subpart B, Appendix C (see section 506.6 of this Part).

Table 5.17: Minimum Energy Efficiency Standards: Dishwashers

Minimum Energy Factor (cycles/kwh)	Maximum Annual Energy Use including Standby Power (kWh)
0.65	339

(q) Chillers

(1) "Chiller" means a factory-made and prefabricated assembly (not necessarily shipped as one package) of one or more compressors, condensers and evaporators, with interconnections and accessories, designed for the purpose of cooling water. It is a machine specifically designed to make use of a vapor compression refrigeration cycle to remove heat from water and reject the heat to a cooling medium, usually air or water. The refrigerant condenser may or may not be an integral part of the package.

(2) The minimum efficiency standards for water cooled chillers, corresponding to the compressor type and capacity, shall be the levels set forth in Table 5.18 determined in accordance with the test procedures set forth in ARI Standard 550/590 (see section 506.6 of this Part).

Table 5.18: Minimum Energy Efficiency Standards: Water-Cooled Chillers (kW/ton)[a]

Centrifugal (150-299 tons)		Centrifugal (300-2,000 tons)		Rotary (≥150 tons)	
Full Load[b]	IPLV[c]	Full Load[b]	IPLV[c]	Full Load[b]	IPLV[c]
0.59	0.52	0.56	0.45	0.64	0.49

[a] Depending on the application, buyers should specify chiller efficiency using either full-load or integrated part-load values

[b] Full load means full-load efficiency is measured at peak load conditions

[c] IPLV (integrated part load value) is a weighted average of efficiency measurements at various part-load conditions

(3) The minimum efficiency standards for air-cooled chillers, corresponding to the compressor type and capacity, shall be the levels set forth in Table 5.19 determined in accordance with the test procedures set

forth in ARI Standard 550/590 as referenced in section 506.6 of this Part.

Table 5.19: Minimum Energy Efficiency Standards: Air-Cooled Chillers (kW/ton)[a]					
Scroll (30-60 tons)		Reciprocating (30-150 tons)		Screw (70-200 tons)	
Full Load[b]	IPLV[c]	Full Load[b]	IPLV[c]	Full Load[b]	IPLV[c]
1.23	0.86	1.23	0.90	1.23	0.98

[a] Depending on the application, buyers should specify chiller efficiency using either full-load or integrated part-load values
[b] Full load means full-load efficiency is measured at peak load conditions.
[c] IPLV (integrated part load value) is a weighted average of efficiency measurements at various part-load conditions

Section 506.6 shall be repealed and add new section 506.6 to read as follows.

506.6 Referenced Material

The following referenced documents have been filed with the New York State Department of State. The documents are available from the addresses listed or, in the case of federal publications, from the Superintendent of Documents, U.S. Government Printing Office, 732 Capitol Street, NW, Washington, D.C. 20401, and for inspection and copying at the offices of the New York State Energy Research and Development Authority. For each reference, additional sources for hard copy materials and web sites, where appropriate, are provided.

Location of Reference	Description of Reference	Where to Obtain a Copy of the Reference
10 CFR[a] 430, Subpart B, Appendix Q (Last amended April 9, 2004)	Test Procedure for Fluorescent Lamp Ballasts	http://www.gpoaccess.gov/cfr/index.html
10 CFR[a] 430, Subpart B, Appendix M (Last amended October 11, 2005)	Test Procedure for Residential Central Air Conditioners and Heat Pumps	http://www.gpoaccess.gov/cfr/index.html
ARI[b] 210/240-2005	Test Procedure for Unitary Air-Conditioners and Air-Source Unitary Heat Pumps less than 65,000 BTUs per hour	www.ari.org

Location of Reference	Description of Reference	Where to Obtain a Copy of the Reference
ARI[b] 340/360-2004	Test Procedure for Commercial and Industrial Unitary Air-Conditioners and Heat Pumps equal to or greater than 65,000 BTUs per hour	www.ari.org
ANSI[d]/ARI[b]/ASHRAE[e]/ISO[c] -13256-1: 1998	Test Procedure for Water Source, Ground Water Source, and Ground Source Closed-Loop Heat Pumps	www.ashrae.org www.iso.org
ARI[b] 310/380-2004	Test Procedure for Packaged Terminal Air Conditioners and Heat Pumps	www.ari.org
10 CFR[a] 430, Subpart B, Appendix F (Last amended June 29, 1979)	Test Procedure for Room Air Conditioners	http://www.gpoaccess.gov/cfr/index.html
NEMA Standards Publication MG 1-2006	Motors and Generators	www.nema.org
10 CFR[a] 431, Subpart B, Appendix B (Last amended October 21, 2004)	Uniform Test Method for Measuring Nominal Full Load Efficiency of Electric Motors	http://www.gpoaccess.gov/cfr/index.html
10 CFR[a] 430, Subpart B, Appendix E (Last amended January 17, 2001)	Test Procedure for Residential Water Heaters	http://www.gpoaccess.gov/cfr/index.html
ANSI[d] Z21.10.3 - 2001	Test Procedure for Commercial Gas Water Heaters	www.ansi.org
10 CFR[a] 430, Subpart B, Appendix A1 (Last amended March 7, 2003)	Test Procedure for Electric Refrigerators and Electric Refrigerator-Freezers	http://www.gpoaccess.gov/cfr/index.html
10 CFR[a] 430, Subpart B, Appendix B1 (Last amended September 20, 1989)	Test Procedure for Residential Freezers	http://www.gpoaccess.gov/cfr/index.html
Energy Policy and Conservation Act, 42 U.S.C. [6291-6307]	Part A--Energy Conservation Program for Consumer Products Other Than Automobiles	http://www.gpoaccess.gov/uscode/index.html

Location of Reference	Description of Reference	Where to Obtain a Copy of the Reference
ASHRAE[e] 72-2005	Test Procedure for Open and Closed Refrigerators and Freezers	www.ashrae.org
NEMA[f] LE5-2001	Test Procedure for Fluorescent Luminaires	www.nema.org
10 CFR[a] 430, Subpart B, Appendix R (Last amended May 29, 1997)	Test Procedure for Measuring Average Lamp Efficiency and Color Rendering Index of Electric Lamps	http://www.gpoaccess.gov/cfr/index.html
ARI[b] 550/590-2003	Test Procedure for Water-Chilling Packages Using the Vapor Compression Cycle	www.ari.org
10 CFR[a] 430, Subpart B, Appendix C (Last amended August 29, 2003)	Test Procedure for Dishwashers	http://www.gpoaccess.gov/cfr/index.html
10 CFR[a] 430, Subpart B, Appendix J1 (Last amended April 9, 2004)	Test Procedure for Clothes Washers	http://www.gpoaccess.gov/cfr/index.html
10 CFR[a] 430, Subpart B, Appendix N (Last amended October 14, 1997)	Test Procedure for Residential Furnaces and Boilers	http://www.gpoaccess.gov/cfr/index.html
10 CFR[a] 431, Subpart E (Last amended October 21,2004).	Commercial Packaged Boilers	http://www.gpoaccess.gov/cfr/index.html

[a] CFR means Code of Federal Regulations.
[b] ARI means the Air-Conditioning & Refrigeration Institute.
[c] ISO means the International Standards Organization.
[d] ANSI means the American National Standards Institute.
[e] ASHRAE means the American Society of Heating, Refrigerating, and Air-Conditioning Engineers.
[f] NEMA means the National Electrical Manufacturers Association.