MEMORANDUM

RE: Ex Parte Communication In Connection with
Docket No. EERE–2010–BT–STD–0027
Energy Efficiency Program for Certain Commercial and Industrial Equipment: Public Meeting and Availability of the Framework Document for Commercial and Industrial Electric Motors,
75 Fed.Reg. 59657 (September 28, 2010).

To: expartecommunications@hq.doe.gov

From: Clark R. Silcox, General Counsel
National Electrical Manufacturers Association

Date: April 18, 2012

cc: Bill Hoyt, Alex Boesenberg, Rob Boeteler, John Malinowski, Andrew DeLaski, Neil Elliott, Dan Delaney, Michael Bruin, Tim Schumann

This memorandum memorializes another communication involving a follow-up to our previous communications in connection with this proceeding and documented in a memorandum dated March 9, 2012.

On April 12, 2012, an email was transmitted to Jim Raba and John Cymbalsky of DOE staff by Rob Boteler of Nidec Motor Corp. on behalf of the Motor Coalition. At the meeting referenced in the March 9, 2012 memorandum, we discussed the scope of the Motor Coalition's proposal for future energy conservation standards and questions were asked about specific motor types and whether they were included or not. The Motor Coalition agreed to provide a written response to these questions. The April 12, 2012 email stated as follows:

"The Motor Coalition (MC) started our initial discussions of expanded scope with the idea of identifying only those motor categories that would not be covered. But in the course of our discussions and interactions with DOE it has become apparent that more clarity of the categories is needed to help communicate and understand. In response to your request for greater clarification of expanded motor scope, the NEMA MG section has put together the attached table, which has been reviewed by the motor efficiency advocates. This table is a working document to help DOE and the MC better communicate, but not intended to be included in rule language. In addition we have noted the nine motor categories that may need better test configuration information. We would like you to review this and let us know if you have any questions specific regarding testing.

"The table is meant to represent a general definition building off of the definition from EISA relating to types of electric motors that are "general purpose alternating current induction motors rated for continuous duty operation on 60 Hz electrical power at 600 volts or less." Clarification of the EISA definition of "electric motor" along the lines of the EPAct definition is used. The table is structured

completely around the EISA definition as it stands, with further definition of subtype I and subtype II [see section C] covering the two remaining type 2 categories that do not move to type one. The table has four parts:

"A. Covered electric motors are designed in accordance with all of the following characteristics

"B. The NEMA nominal efficiency of a motor with the characteristics of section A above and having any of the following characteristics and none of the characteristics listed under sections C and D below is required to be not less than the NEMA nominal efficiency in the appropriate NEMA MG1 Table 12-12 or Table 20-B

"C. The NEMA nominal efficiency of motors with the characteristics of Section A and some of Section B above and having any of the following characteristics and none of the characteristics listed under Sections D below is required to be not less than the NEMA nominal efficiency in the appropriate NEMA MG1 Table 12-11 or Table 20-A

"D. Motors with any of the following characteristics are exempt from efficiency standards.

"I will let you forward to Navigant and the others on the DOE team. I have not sent this to them."

On April 12, 2012, Mr. Raba responded as follows:

"Thank you, Rob.

We will take a look.

Jim

James Raba
Appliances & Commercial Equipment Standards
Building Technologies Program
Office of Energy Efficiency & Renewable Energy
U.S. Department of Energy
Telephone: (202) 586-8654"

A .pdf of the spreadsheet attachment that accompanied Mr. Boteler's email is annexed hereto.

Item #	Characteristic	MG1 - Table 12-12	MG1 - Table 12-11	Exempt	Comments	Special Testing Required	there is a comment embedded in cell G1 that should be moved to where it applies
	A. Covered Electric Motors Are Designed in Accordance With All OF The Following Characteristics						
15	General purpose motor	X			As defined in 431.12 of 10 CFR Part 431		431.12 defines "g p motor" not "g p", DOE pointed this out as problem with EISA
8	Three-phase	X					Drop use of polyphase since only talking about 3 phase
9	Used on 60 Hz power supply	X			Includes motors typically marked 60Hz or 50/60Hz		"Used on" is DOE text as DOE did not like just "marked for"
6	Rated voltage up to 600 VAC	X					
1	Continuous duty	X					
5	2, 4, 6, or 8 poles	X					prefer using specific pole numbers
	Single-speed						
2	NEMA Design A,B,C; IEC Design N, H	X					dropped "and" to remove ambiguity
	Random wound stator						
10	NEMA 56 frame series or larger, exept for 56 frame open motors or IEC 80 frame or larger, except for 80 frame open motors	X			Includes IEC 100 frame NEMA 56 frame and IEC 80 frame open motors are covered by Subpart X of 10 CFR part 431		Grouped NEMA and IEC together because tiela above refers to "ALL", so can't be separate items.
11	IEC 80 frame or larger, except for 80 frame open motors	X			Includes IEC 100 frame		
19	Altitude	X			When larger size frame motor is not required for high altitudes		
20	Ambient	X			When larger size frame motor is not required for low or high ambient		
	Standard Hp or kW ratings						
	Squirrel-cage rotor				Cast or fabricated		
	B. The NEMA Nomnal Efficiency of A Motor With The Characteristics of Section A Above and Having any of the Following Characteristics and None of the Characteristics Listed Under Sections C and D Below Is Required to Be Not Less Than The NEMA Nominal Efficiency In The Appropriate NEMA MG1 Table 12-12 or Table 20-B						
7	Broad voltage range	X			Example: 208-230; Required to meet efficiency standards at all voltages in the marked range		
	Marked "Usable at 200 volts"	X			Not required to meet efficiency standard at the "Useable at" voltage [208 considered an unusual service condition]		NEMA MG1 standard marking is "200", not "208"
	Open	X			Excludes 56 frame Open for Small Motor Rule (General Purpose, 1-3HP), all other 56 frame Open construction types must meet 12-12 Table levels		
12	TEFC	X					
13	TENV	X					
16	Definite purpose	X			Some products may be exempt, review against exempt list		Review yet to be completed????
17	Special purpose	X			Some products may be exempt, review against exempt list		
21	Special leads	X			This option does not vary the status of basic motor		
22	Special insulation	X			This option does not vary the status of basic motor		
23	High S.F.	X			This option does not vary the status of basic motor		
24	Space heaters	X			This option does not vary the status of basic motor		
25	Wye Delta	X			This option does not vary the status of basic motor		
26	Part Winding	X			This option does not vary the status of basic motor		
27	Temperature Rise	X			This option does not vary the status of basic motor		
28	Thermostat/thermistor	X			This option does not vary the status of basic motor		
	Thermally Protected	X			Typically this product requires a 3rd Party safety certification (ex: UL, CSA, etc.). Do we need 2 extra years for OEM designs to be approved?		
30	Hazardous Location - Division 1	X			Typically this product requires a 3rd Party safety certification (ex: UL, CSA, etc.). Do we need 2 extra years for OEM designs to be approved?		
31	Fungus/trop protection	X			This option do not vary the status of basic motor		
32	Special balance	X			This option do not vary the status of basic motor		
33	Special Conduit Box	X			This option do not vary the status of basic motor		
34	Motors operated from inverters	X			NEMA Design A or B motors that are single speed, meet all other criteria under the definitions in EPCA for covered equipment, and can be used with an inverter in variable speed applications as an additional feature, are covered equipment under EPCA. In other words, being suitable for use on an inverter by itself does not exempt a motor from EPCA requirements.		Part 30 is not "Inverter Duty" motors
36	Non-standard HP or kW ratings	X			The HP should be rounded up or down to next closet HP for efficiency requirement per the rules defined in 10 CFR Part 431		
37	Aux Conduit Box	X			This option does not vary the status of basic motor		
38	Special Paint	X			This option does not vary the status of basic motor		
39	Drains	X			This option does not vary the status of basic motor		
40	Drip Cover	X			This option does not vary the status of basic motor		
41	Ground lug/hole	X			This option does not vary the status of basic motor		
42	Screens	X			This option does not vary the status of basic motor		
43	Mounting F1,F2;W1-4;C1,2	X			This option does not vary the status of basic motor		
44	Bearing caps	X			This option does not vary the status of basic motor		
45	Shielded bearing	X			This option does not vary the status of basic motor	x	
46	Sealed bearings	X			This option does not vary the status of basic motor	x	
47	Clamped bearings	X			This option does not vary the status of basic motor		
48	C Face	X			This option does not vary the status of basic motor		
49	D Flange	X			This option does not vary the status of basic motor		
50	Contact seals	X			This option does not vary the status of basic motor	X	

51	Flanged special	X			This option does not vary the status of basic motor		
52	Footless	X			This option does not vary the status of basic motor		
53	Insulated bearings	X			This option does not vary the status of basic motor		
54	Non-contact seals	X			This option does not vary the status of basic motor		
55	Std Shafts/NEMA	X			This option does not vary the status of basic motor		
60	Non-standard Shaft dimensions or additions	X			This option does not vary the status of basic motor		
56	Special fan material	X			This option does not vary the status of basic motor		
57	Quiet or special fans	X			This option does not vary the status of basic motor		
58	All Washdown including stainless steel constuction	X			This option does not vary the status of basic motor		
59	Shaft special material	X			This option does not vary the status of basic motor		
61	Double shaft	X			This option does not vary the status of basic motor		
62	Wound Stator / Squirrel-cage Rotor Sets: Motors	X			Stator / Rotor Sets that are made into electric motors must comply with this scope expansion motor regulations.		Looked like "Wound" also applied to Rotor
64	Integral shaft partial motors (3/4 Partial Motors)	X			The term 'partial motor' means any electric motor sold without one or both endplates. Would need to show compliance by testing an electrically "similar complete model".	X	**was "shafted" - modified comments**
65	Close-Coupled Motors incl. Hydraulic pump motors	X			May require testing of an electrically similar motor.	X	
66	Special paint	X			This option does not vary the status of basic motor		already Item 38
67	Dripcover	X			This option does not vary the status of basic motor		already item 40
68	RTD's	X			This option does not vary the status of basic motor		
70	Brake motor	X			Brake mounted to the motor so that the motor may operate as a general purpose motor with the brake removed		
71	Special mounting or base	X			May need to show compliance by testing a "similar model" that could be more easily attached to a dynamometer.		
77	Immersible	X			Typically an enclosed motor that can be immersed in water but it is typically operated after immersion/flooding is cleared. Motor should be tested with contact seals removed.	X	
82	Encapsulated Stator Windings	X			This option does not vary the status of basic motor		
83	Motors with sleeve bearings	X			May need to show compliance by testing a "similar model" with anti-friction ball bearings that could be more easily attached to a dynamometer.	X	
84	Vertical Pump Motor (P-Base)	X			May need to show compliance by testing a "similar model" with anti-friction ball bearings that could be more easily attached to a dynamometer.	X	
85	Motors with thrust bearings	X			May need to show compliance by testing a "similar model" with anti-friction ball bearings that could be more easily attached to a dynamometer.	X	
	C. The NEMA Nominal Efficiency of Motors With The Characteristics of Section A and Some of Section B Above and Having Any of the Following Characteristics and None of the Characteristics Listed Under Sections D Below Is Required to Be Not Less Than The NEMA Nominal Efficiency In The Appropriate NEMA MG1 Table 12-11 or Tabale 20-A						
18	U-Frame		X		Next frame larger for automotive industry. **ACTION ITEM: NEMA MG1 definition needs to be inserted (180,210, 250U-440U). NEMA to repost the U-Frame pdf document that dimensionally defines this construction.**		
29	Fire Pump		X		Special purpose motor requiring UL1004 approval for fire pump use. Defined as general purpose motor in NFPA, this should be changed there.		
	D. Motors With Any Of The Following Characteristics Are Exempt From Efficiency Standards						
3	NEMA Design D;			X			
14	TEAO or Open Air Over			X	Requires air flow from external drive air source		
35	Definite Purpose Inverter-Fed [Part 31] motors			X	Special purpose motor intented to be operated on a variable frequency inverter drive with a specific stator winding that allows wide speed range or high torque at low speed.		corected type to mathc title of Part 31
63	Wound Stator / Squirrel-cage Rotor Sets: End Use Equipment			X	Customers that apply these sets into their end use equipment, i.e. submersible pumps, would be exempt to the motor regulations.		How does this differ from Item #62?
69	Integral Brake motor			X	Integral brake design factory built – cannot operate at its rating if the brake were removed		
72	Multispeed motors			X	Uses special single or multiple stator windings to achieve more than one speed		
73	DC motors			X	not alternating current		
74	Single phase motors			X	not polyphase - generally covered by Subpart X of 10 CFR Part 431		
75	Liquid Cooled			X	Liquid-cooled electric motor is any electric motor which is cooled by circulating liquid, the liquid or liquid conductors coming in direct contact with the electric motor parts.		
76	Submersible			X	Submersible electric motor is any electric motor designed for operation while continuously submersed in a liquid.		
78	Electronically Commutated Motors (ECM)			X	requires special control for operation		
79	Switched Reluctance motors (SR)			X	requires special control for operation		
80	Permanent Magnet Motors			X			
81	Intermittent or Non-Continuous Duty motors			X	typically special designs in small package size for high energy density		