

DISTRIBUTION TRANSFORMER DOE 2010 EFFICIENCY STANDARDS



Overview

Effective January 1, 2010 Distribution transformers manufactured for use in the United States will be required to comply with Department of Energy guidelines listed on the following pages. The ruling impacts the following:

- Single phase - 10 to 833 kVA
- Three phase - 15 to 2500 kVA

Benefits of the National Efficiency Standard Saves energy over 29 years

- Will save the equivalent electricity use of 27 million US households in a single year.
- Eliminating need for 6 new 400 MW power plants

Reduce greenhouse gas emission of ~238 million tons of CO₂

- Equivalent to removing 80% of all light vehicles for one year
- Others emission reductions not included in final justification
 - Greater than 46 thousand tons (kt) of nitrous oxide (NO₂)
 - Greater than 4 tons of mercury (Hg)

Transformer Losses

Transformer losses are a combination of no-load losses and load losses. No load losses or core losses are a function of voltage and load losses a function of current or I²R losses.

The purpose of DOE 2010 is to have higher efficiency or fewer losses. Analyzing this on a macro level, improved efficiency will translate into huge saving in cost of electricity. Also it will enable us to produce less electricity, less coal fired power plants and much better green environment for all of us.

Tables

The efficiency of all medium voltage dry-type distribution transformers when tested at 50% of the rated output power, shipped on or after January 1, 2010 shall not be less than the applicable values shown in table below:

Single Phase Dry			
BIL KVA	20 -45 KV Min. Efficiency%	46 -95 KV Min. Efficiency%	≥ 96 KV Min. Efficiency%
15	98.10	97.86	-
25	98.33	98.12	-
37.5	98.49	98.30	-
50	98.60	98.42	-
75	98.73	98.57	98.53
100	98.82	98.67	98.63
167	98.96	98.83	98.80
250	99.07	98.95	98.91
333	99.14	99.03	98.99
500	99.22	99.12	99.09
667	99.27	99.18	99.15
833	99.31	99.23	99.20

Three Phase Dry			
BIL KVA	20 -45 KV Min. Efficiency%	46 -95 KV Min. Efficiency%	≥ 96 KV Min. Efficiency%
15	97.50	97.18	-
30	97.90	97.63	-
45	98.10	97.86	-
75	98.33	98.12	-
112.5	98.49	98.30	-
150	98.60	98.42	-
225	98.73	98.57	98.53
300	98.82	98.67	98.63
500	98.96	98.83	98.80
750	99.07	98.95	98.91
1000	99.14	99.03	98.99
1500	99.22	99.12	99.09
2000	99.27	99.18	99.15
2500	99.31	99.23	99.20

Single Phase Liquid- Immersed Transformers *	
KVA	Three-phase efficiency
10	98.62
15	98.76
25	98.91
37.5	99.01
50	99.08
75	99.17
100	99.23
167	99.25
250	99.32
333	99.36
500	99.42
667	99.46
833	99.49

Three Phase Liquid- Immersed Transformers	
KVA	Three-phase efficiency
15	98.36
30	98.62
45	98.76
75	98.91
112.5	99.01
150	99.08
225	99.17
300	99.23
500	99.25
750	99.32
1000	99.36
1500	99.42
2000	99.46
2500	99.49

* These units are not manufactured by MGM Transformer Co.

Summary

Located on a five-acre site just southeast of metropolitan Los Angeles, MGM is the largest Transformer manufacturer west of the Mississippi. The manufacturing plant encompasses 120,000 square feet. Adjacent to the manufacturing plant, is a separate 20,000 square foot facility, housing offices for administration, engineering, and sales. MGM has been manufacturing quality liquid and dry type transformers since 1975.

In addition, we have a second manufacturing facility just south of the border in Tijuana, Mexico. This state of the art 93,000 square foot facility manufactures MGM's entire low voltage product line as well as subassemblies for our medium and large power units.

MGM Transformer has a longstanding tradition of environmental conservation. Our commitment to the environment is apparent in our daily activities as we pursue continued improvement in both our design and production processes. We aim to exceed the highest environmental standards in our products. As a company that deals primarily with the conversion of voltage and power, MGM has come to learn many things power related. Transformer designs that result in environmentally friendly products are just one of them.

We have, however, continued raising the bar and will always strive to produce even more efficient products. Applying for and being a proud member of NEMA premium efficiency membership was one of the first steps. MGM will comply with all of Department of energy 2010 standards effective January 1st 2010.

You can be assured of MGM quality. We have been certified by ISO and are UL listed. We are a quality driven company and strive to manufacture the best products.



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