



Frequently Asked Questions

On October 12, 2007, the DOE published a final rule that sets new energy efficient standards for Medium Voltage Distribution transformers used in the distribution of electricity.

This frequently asked questions list will provide answers to some commonly asked questions regarding the new medium voltage distribution regulations (10 CFR, Part 431, Subpart K).

1. What are the regulations?

- Any dry-type or liquid filled distribution transformer manufactured on or after January 1st, 2010, shall be required to meet or exceed the standards listed in the distribution tables for their kVA and BIL rating.
- Medium voltage dry-type distribution transformers with kVA ratings not appearing in the table shall have their minimum efficiency level determined by linear interpolation of the kVA and efficiency values, immediately above and below that kVA rating.

Single Phase Efficiency (%)			
kVA	20-45kV BIL	46-95kV BIL	>=96kV BIL
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 Efficiency (%)			
kVA	20-45kV BIL	46-95kV BIL	>=96kV BIL
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

All efficiency values are at 50% of nameplate-rated load.

2. When do the new regulations take effect?

- As of January 1st, 2010, all liquid and dry-type medium voltage distribution transformers manufactured or imported into the US, must comply with the new DOE standards.

3. What product does it affect?

- The Department of Energy (DOE), established new efficiency values affecting liquid immersed and medium voltage dry-type distribution transformers with single phase ratings from 10-833 kVA and three phase ratings from 15-2500kVA.

4. What are the limitations?

According to the DOE, the distribution transformer must have:

- A primary voltage of 601V to 34.5 kV
- An output voltage of 600 V or less
- Rated for operation at a frequency of 60 Hz
- A capacity of 15 kVA - 2500 kVA

5. What transformers are not included in this regulations?

- Autotransformers
- Drive Isolation Transformers
- Grounding Transformers
- Machine Tool Control Transformers
- Non-Ventilated Transformers
- Rectifier Transformers
- Regulation Transformers
- Sealed Transformers
- Special Impedance Transformers
- Testing Transformers
- Transformers with tap range of 20% or more
- Uninterruptible Power Supply Transformers
- Welding Transformers

6. What are the benefits of the regulations?

According to the DOE, these standards will provide significant benefits to the nation:

- Saves 2.74 quads (1015 BTU's) of energy over 29 years.
 - Equivalent to all the energy consumed by 27 million American households in a single year.
 - Expect it to eliminate the need for six new 400 megawatt combined-cycle gas turbine power plants.
- Cumulative greenhouse gas emission reductions of 238 million tons of carbon dioxide.
 - Equivalent to removing 80 percent of all light vehicles from U.S. roads for one year.

7. Why did the DOE mandate the new efficiency requirements

- It is intended to reduce additional energy consumption, as well as reduce greenhouse gases.

8. Are all transformers subject to this new ruling, regardless if they are manufactured outside the US?

- The rule specifically applies to single phase, three phase, and Substation type, Liquid-filled and Dry-type medium voltage transformers that are manufactured in, or installed in the US. For a list of transformers excluded from the new ruling, please go to: http://www1.eere.energy.gov/buildings/appliance_standards/commercial/pdfs/71fr24972.pdf

9. Is it recommended that I convert to a DOE compliant transformer before January 1st, 2010?

- Energy consumption can be decreased by purchasing a more efficient transformer. The earlier a customer purchases an energy efficient transformer, the earlier they can recognize the benefits of reduced operating costs.

10. Does HPS have transformers that meet the new 2010 regulations?

- HPS is now ready to quote and deliver your power and switchgear transformer needs with full compliance to the new 2010 ruling.

In Canada:

595 Southgate Dr.
Guelph, ON N1G 3W6
Ph: 608-356-3921
Toll Free: 888-798-8882

In USA:

1100 Lake Street
Baraboo, Wisconsin 53913-2866
Ph: 608-356-3921
Toll Free: 866-705-4684