



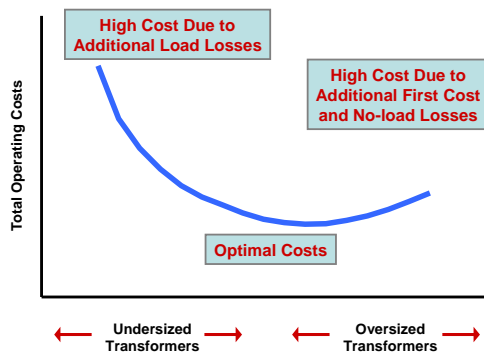
Z Solutions®

TRANSFORMER SIZING ISSUES

Z Solutions offers a range of services related to choosing the correct transformer for installation. These services address the uncertainty and limitations of optimal transformer sizing.

- There is uncertainty in the estimates of the peak load that the transformer will serve
- There is uncertainty as to the transformer losses over various loading ranges
- There is financial uncertainty in the risk associated with under-sizing versus over-sizing
- There is uncertainty as to the temperatures the transformer will face and what impacts they will have on individual loads
- And there are limitations as to how many transformers a utility can stock and uncertainty which are the appropriate ones to stock

Estimating the building's or buildings' peak load boils down to determining the connected load by summing the load ratings of all end-uses including lighting and miscellaneous items and then applying a diversity factor. This diversity can be applied to the whole building but is usually thought to be more accurate if applied to each load separately and the results totaled. This approach provides a more accurate estimate of the load the transformer will see.



In residential applications, there is diversity between appliance and end-uses but also the diversity between houses when more than one house is served by a transformer. This approach appears simple enough. However, the complexity is compounded when you consider the variety of situations encountered across customer classes: retail shops versus restaurants versus medical facilities and single family residences versus multi-family residences.

Estimating the transformer's load directly impacts the utility's financial risk associated

with choosing a transformer. As illustrated in the above, the risks are not equal, in most cases under-sizing is more costly than over-sizing.

Confidence in sizing transformers requires confidence in estimating the load, understanding transformer operations and optimizing a complex system. Z Solutions provides support in all facets of this crucial process.

For further information contact Z Solutions: contact@zsolutions.com

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