



Technical Bulletin

Enemies Of Electrical Insulating Oil

Insulating oil has few enemies, and its manufacturers and users make a concerted effort to protect it from such enemies.

Oxidation.

Oxidation is the most common cause of oil deterioration. The transformer manufacturer puts forth a significant effort to make sure that the tank or case is well-sealed from the atmosphere. Careful drying and vacuum processing removes air and moisture prior to sealing the tank after which it is filled with dry air or nitrogen to minimize the exposure to oxygen.

Contamination.

Moisture is the chief among potential oil contaminants. Its presence can provide a source of reactive products with the oil in the presence of heat. It also tends to low-

er the dielectric properties of the insulating oil. The same precautions that are exercised to protect the oil from oxidation are used to protect it from moisture.

Excessive temperature.

Excessive heat is an enemy of oil. It will cause decomposition of the oil itself and/or it will increase the rate of oil oxidation. The best way to protect against excessive heat is to avoid overload of the transformer.



Comments

In the rare instance that a customer should request us to take back unused stocks of electrical oils, effort should be made to ascertain the integrity of the lubricant before making any decision. This will involve physical inspection of the drums as well as the storage area. The oil should also be tested for moisture content and dielectric strength before making any decision. It should also be borne in mind that it might be necessary to repackage this oil. The repackaging electrical oils in itself can be the origin of contamination if proper precautions are not taken.

Lube Tip: Recommended Frequency of Transformer Oil Analysis

	>150 KV	Between 70 KV and 150 KV	Between 36 KV and 70 KV
Megavolt amperes (MVA) > 150	Twice a year	Twice a year	-
MVA between 60 and 150	Twice a year	Yearly	Every 2 years
MVA between 15 and 50	-	Every 2 years	Every 2 years

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