DRY TYPE TRANSFORMER MAINTENANCE

Maximize your transformer's life-expectancy

CAUTION: Always de-energize a transformer and ground its case before entering or working on the transformer. Connect the ground to all transformer terminals. Remove these connections before reenergizing the transformer.

The life of your dry type transformers can be improved with proper maintenance. An inspection and maintenance schedule should be established to maximize the life of this equipment. Evidence of rusting, corrosion, and deterioration of the insulation, varnish or paint should be checked, and corrective measures taken. Auxiliary devices should be inspected and serviced during these inspections.

Windings should be inspected for contaminants, especially on insulating surfaces or where they could restrict air flow. Check for loose connections, condition of tap changers, terminal boards and for the general condition of the transformer. Check for signs of overheating and tracking or carbonization marks.

The intervals at which ventilated dry type transformers should be inspected depends on operating conditions. For clean, dry locations, an annual inspection may be sufficient. For harsher environments where there is dust, metallic particles or chemical fumes, a more frequent inspection may be required. Usually after a few inspections, a schedule can be established based on the existing conditions.

Dust, dirt or residues on windings or insulators should be removed to permit free circulation of air and to reduce the possibility of insulation breakdowns. Particular attention should be given to cleaning windings and vents.

The windings may be cleaned with a vacuum cleaner, a blower, or with compressed air. The use of a vacuum cleaner is preferred, followed by compressed air or nitrogen. Maintain adequate ventilation during cleaning. The compressed air or nitrogen should be clean and dry and should be applied at a relatively low pressure (not over 25 lbs/in^2). Lead supports, tap changers and terminal boards, bushings, and other major insulating surfaces should be brushed or wiped with a dry lint-free cloth. The use of liquid cleaners is undesirable because some have a deteriorating effect on insulating materials.

The insulation resistance test is used to determine the moisture content of a transformer's insulation material. The insulation resistance test should be made before conducting an applied voltage test. The test data should be recorded with the ambient temperature and humidity at the time of measurement.

If a dry type transformer's insulation resistance readings do not meet the minimum values in Table 1 below, it should be dried before the applied voltage test is performed or before the transformer is placed in service. Contact Alfa for more information.

MINIMUM INSULATION RESISTANCE TABLE

WINDING CLASS KV	INSULATION RESISTANCE MΩ
1.2	600
2.5	1000
5.0	1500
8.7	2000
15.0	3000

TABLE 1

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