



Maximize the service life of your transformers

HSB, a Munich Re company, is a technology-driven company built on a foundation of specialty insurance, engineering, and technology, all working together to drive innovation in a modern world.

Introduction

Every year, HSB investigates numerous transformer failures. The primary reasons for these failures are poor or nonexistent preventive maintenance programs or improper electrical loading.

To help you achieve reliable and maximum uninterrupted service life of your transformer, we are offering the following comments and suggested recommendations.

Installation

- The installation and operation of your transformer should be checked to ensure that you are keeping the electrical loading of the unit within the design capability.
- The transformer must be compatible with the location in which it is installed (e.g., air-cooled unit in a dry, clean environment) for oil-filled transformers, a properly sized containment should be installed.
- The transformer installation should be free from external hazards such as trees and weeds that could cause potential shorting of the unit.
- Oil-filled transformers should have sufficient spacing from other oil-filled equipment including sufficient spacing from the control house. Details for recommended spacial distances may be found in IEEE 979.

Oil testing

One key area of preventive maintenance for liquid-filled transformers should be annual sampling of the unit's insulation medium.

A sample of the fluid should be taken for screen testing and gas-in-oil analysis. These tests will indicate if internal problems with the unit exist and what, if any, corrective action should be taken.

Connections

On all transformers, the bushings and insulators must be kept clean and in good repair, with broken porcelain and brittle gaskets replaced as needed.

All electrical connections must be tight, because loose or high-resistance connections can cause short circuits or single phasing which will cause winding damage.

Cooling

Whether the unit is air or liquid cooled, it is important that adequate, unrestricted outside air is allowed to circulate freely. Dust and dirt must be removed from cooling vents and windings on all air-cooled units.

The radiators on liquid-filled units should be leak-free and clean.

Safety

When service is performed on a transformer, it is important to note that all electrical safety precautions are followed. Energized transformers can and do represent significant shock hazards.

All personnel working on your unit must be properly trained and qualified.

Cost

- The cost of unscheduled and unwanted breakdowns of your transformer can be more than you might expect.
- Even when insurance is available, the deductible alone may still account for a considerable out-of-pocket expense.
- Having insurance may be of little comfort when your transformer is down and you are left in the dark.
- If you have tenants or are trying to run a business, you don't need the added headaches of irate customers because your system is down due to minor maintenance oversights.
- Consider the use of a good transformer health monitoring system from a tried and true OEM. A good monitoring system is highly suggested and will provide predictive analytics that may prevent failure of your asset. It may also inform you as to when the maintenance is due on your asset.

HSB help

Please give us a call! We are ready to assist you in taking care of your transformer needs.



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This article is intended for information purposes only. All recommendations are general guidelines and are not intended to be exhaustive or complete, nor are they designed to replace information or instructions from the manufacturer of your equipment. Contact your equipment service representative or manufacturer with specific questions.

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