CORONA INSPECTION TRAINING INSTITUTE

The Demand for Reliability

CITI, the corona inspection training institute was established in the USA to teach, train and educate predictive maintenance engineers and provide them with new concepts and methods of using UV inspection to detect and identify faults before they turn into major failures.

CITI is an independent entity, sponsored by Ofil, operating throughout North America, offering education to whomever wishes to gain education, be up to date, and become a certified UViGrapher.

A Single Physical Phenomenon Can Trigger So Many Modes of Degradation

"…It is amazing that a single physical phenomenon can be the trigger of so many modes of degradation – all at once…" writes Professor Rafi S. Gorur of Arizona State University in the INMR publication (Issue 87 Quarter One 2010 Volume 18 Number 1 Page 18).

In his article "Corona: Silent But Deadliest Enemy for Composite Insulation", Prof. Gorur depicts the factors and processes caused by corona that lead to deterioration of insulation material. The full article is available at the INMR article archive.

- **Ultra Violet Radiation** - UV is discharged during corona formation. It has been verified that polymer material is susceptible to degradation due to UV more than to solar radiation, in particular since the UV is very close to the substance
- **Ozone (O3) –** Ozone is a byproduct of corona discharge. Ozone attacks materials such rubber, gaskets and seals, characterized as elastometric materials. Evidently, even very small amounts of ozone are enough to initiate cracking
- **Acids – both organic (oxalic) and inorganic (nitric)** – Moisture (humidity on surface, precipitation etc.) in combination with contamination and corona create acid. Acid on polymers are active degradation factors
- **Mechanical attack** – Researchers have lately proved that repeated corona bombardment drills holes in the polymeric substance. Calculations lead to the conclusion that at the tip of the discharge the temperature is so high that it evaporates even inorganic material such as mica.

What causes corona?
How does it propagate?
How to predict failure before they occur?
How to protect?
These and more are discussed in class.

UViGraphers? Thermographers?

These are rather new titles for certified trained engineers that diagnose systems, provide prognosis and assist utilities maintain their assets effectively by using UV and IR cameras, respectfully.

At times when diplomas are necessary and smart workers are appreciated, more and more people seek opportunities to promote their status, make a change, and become professionals. Moreover, at times when researches about corona and its effect on reliability are conducted throughout the world by HV laboratories, research institute, academies, utilities etc., there is a greater need for a school such as CITI that can provide the down-to-earth practical sifted information.

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