

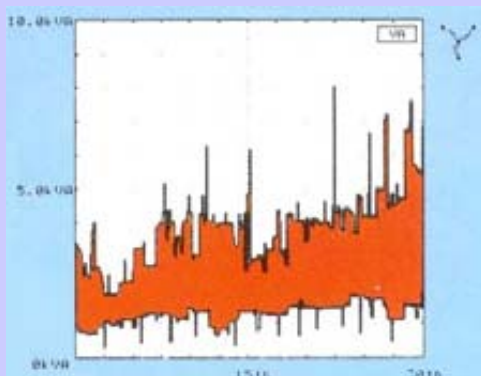
INCIDENT ANALYSIS AT ELECTRICAL POWER SYSTEMS.

The title of this activity pretends to identify S.T.&M.'s aptitude to confront miscellaneous situations that happen during the use of an electrical power system.



We do not refer to common situations that less specialized professionals can solve, but to those other situations that, because of their nature or because they need special technical equipment, become a headache for all the implied ones. For example:

Harmonic pollution.



Before, this was not a problem, on the other hand, now it is frequent.

Regulated power equipment (non-linear loads) distorts the current wave.

This current distortion alters the voltage wave from an ideal sinusoidal wave, so there is harmonic pollution in the electrical system.

Due to the nature of this phenomena, some devices produce harmonic pollution and others are affected by it, even in different installations.

This problem has a natural growth. Due to this, many countries have regulated the harmonic pollution levels of equipment and installations.

Some disorders originated by harmonic pollution are:

- Faults in regulation systems.
- Overloads at capacitor banks.
- Resonances with dangerous overvoltages and overcurrents.
- Anarchic behavior of protections.
- ...

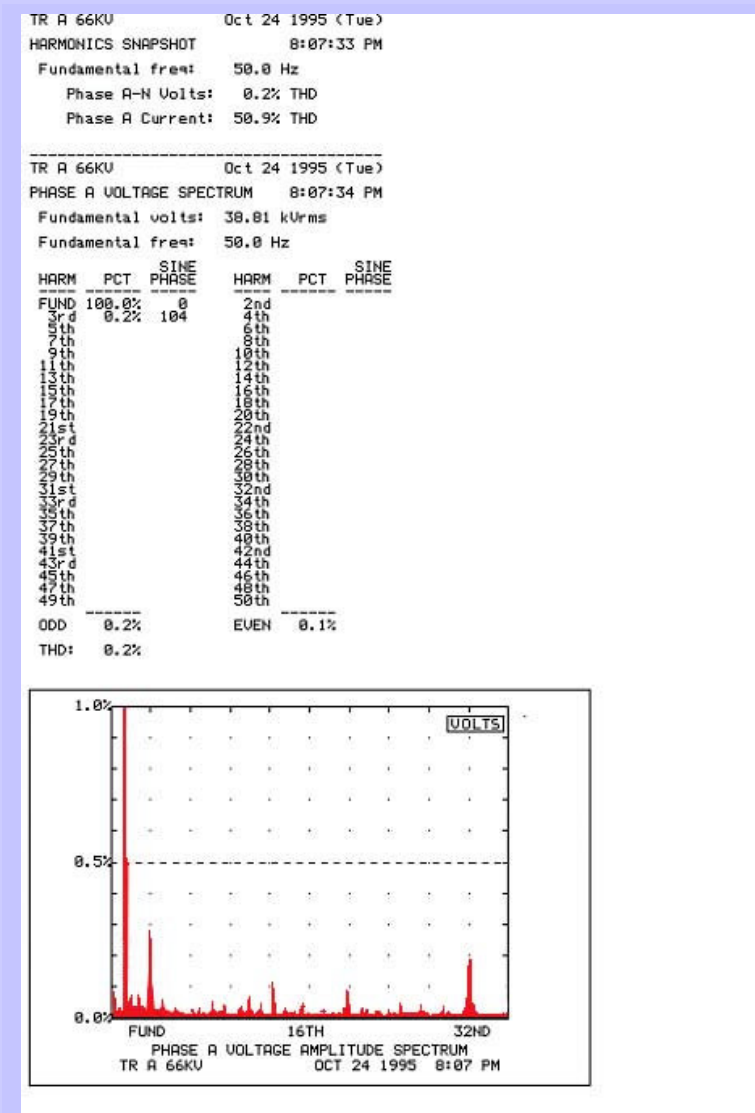
Transients.

We refer to gaps, micro-blackouts, impulsive voltages...

All of them have a common denominator: they have a random behavior and their very short duration evidences nothing in conventional measurement systems.

However, their effects are very harmful.

Analyzing, measuring, analyzing again and raising solutions (attacking to the origin of the problem or immunizing the affected systems) are frequent activities for S.T.&M.



Recording, measuring, testing...

Listing S.T.&M.'s possibilities in detail is not reasonable and it would be very extensive, specially when it is a question of identifying and solving problems in electrical power systems.

Habitual tasks are:

- **Recording loads** or other parameters.
- **Verification of electricity meters** or of other measurement equipment.
- **Soil resistivity measurement**, previous to the grounding system design.
- **System topology review** after some years of a maybe not very controlled growth.
- **High voltage wires testing services.**
- **Adaptation of measuring systems** to regulation.
- **Generation of documentation** according to regulation.
- **Consultancy services** (reglamentation, technical aspects...).
- ...



In short, we try to respond all our clients' questions and problems during the use of their electrical power systems.