IV NDT Panamerican Conference
Buenos Aires – October 2007

AAENDE
Asociación Argentina de Ensayos No Destructivos y Estructurales

# Infrared Thermography Applied on (Uncovered) Outdoor Electrical Substations

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The Infrared Thermography when correctly applied, besides to be a Non Destructive method, is an excellent predictive maintenance tool for high voltage substations. Its use allows failure detections at their initial phases avoiding, therefore, undesired not programmed maintenances. Consequently, there is an increasing in the inspections safety, time between maintenances and power system reliability, reducing costs. However, there are limitations in its applications, mainly when it is carried out in outdoor environments. In these conditions, the obtained results can be considerably influenced by environmental conditions quantities, turning the analysis more difficult and diagnosis of inspected equipments less reliable. This work defines the main limitations and influences on a thermographic inspection on uncovered high voltage substations and presents partial results of a research and development project (R&D). That research analyzes the influences of load current and environmental factors over the measuring and analysis of thermal anomalies. It presents the implications of these influences, through tests in laboratory and in field, proposing procedures to reduce or to avoid them, enabling a more consistent analysis of the found failures.