4.1.10. NEW DEVELOPMENT FOR "SEEN INVISIBLE"

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Advanced (today's) technology required more reliable, more accurate information on the current situation of item and, as much as possible, prognosis and life expectation. High speed, high stress, high pressure performances of the product (item) had increased demand for more advanced NDT techniques.

Not the search for defects but the presents (or absence) of the condition of destruction.

New approach to industrial safety and condition monitoring, early detection of condition, which cannot be detected with the use of traditional NDT inspection aids

Stresses are not visible to most conventional NDT methods. Engineers can design structure for certain strength, calculate the greatest possible stress in the structure (assuming the metal is uniform).

To estimate the structural failure, it's necessary to search not for defect but for the conditions of failure. Metals have physical properties which changes the magnetic state under mechanical stresses. Because of that, location of stress concentration appearance there is anomalous change of magnetic properties of metal. The principle of Stress Indicator is based on measurement of Electromotive Force (EMF) and limited to Ferromagnetic materials with effective thickness of up to half inch.

Appliance "StressVision-2" has one special mode for detection of mechanical stress concentration and difference of principal mechanical stresses with Quantitative Assessment of mechanical stress concentration and qualitative assessment of difference levels of principal mechanical stresses in "the direction".

Some of typical applications:

In-Service – preventive maintenance and flaws prediction, detection and classification of material degradation

Welded flaws - Detection and classification of stress areas

Heat Treatment – Detection effectiveness of Heat Treatment process

Fitness for Purpose – Classification of known flaws for purpose