

4.1.26. ROBUST ESTIMATION OF THE ENERGY EQUIPMENT RESIDUAL RESOURCE

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To determine the residual resource of energy equipment there are obtained algorithms that allow us to get rather precise robustness estimations. Info-estimation systems, developed on such algorithms, successfully approved by the largest Electro-energy enterprises of our country.

Critical point, that arises in the electro-energy industry, is primarily affected by increasing quantity of energy facilities that are about to exhaust their working resource. Admittedly, power stations' and other energy facilities' design life is almost confined nowadays.

The estimation of depreciation degree showed that the certain quantity of caldron turbines, steam pipelines and energy equipment is in the demolition stage, i.e. in the stage in which depreciation level exceeds its planned benchmark.

To estimate the parameters of the equipment's technical condition, and consequently the residual resource estimation, depends on whether the research results are interpreted in the right way.

For example, in the electromagnetic control systems of the energy equipment, when the estimation of the metal items' superficial cracks is being undertaken, it is important to take into consideration such major parameters as vibrations; electromagnetic fields' impact; electromagnetic heterogeneity of the metals through brazing, peening, controlled uneven surface, geometrical shift of the initial transformer.

All these points lead to the abnormal errors in the estimation process, which, in their turn lead to inaccurate estimates of the equipments' technical condition when standard information processing methods are being used.

To achieve precise and reliable results of the technical condition estimation, robust algorithms of the information processing are widely used within the electromagnetic control systems of the electro-energy equipment.