

5.1.1. THERMAL TESTING WITHIN THE SYSTEM SECURING INDUSTRIAL SAFETY AND ENERGY EFFICIENCY OF INDUSTRIAL FACILITIES AND HOUSING AND PUBLIC UTILITIES SECTOR. EXPERIENCE IN PERSONNEL CERTIFICATION UNDER RUSSIAN AND EUROPEAN STANDARDS 4.1.

Biryukova N.P., Abramova E.V., Batov G.P.,
Scientific and Training Center "QUALITY", Moscow, Russia

Paper is devoted to the topical matters of development of directions of thermal testing (TT), its technological base and experience in personnel certification.

Provision of the adequate level of safe operation, energetic and ecological efficiency of technical devices, buildings and constructions in contemporary conditions requires development of normative-legal, technical and methodological base of non-destructive testing and availability of qualified personnel.

One of the main methods for diagnostics of technical state, operational safety and evaluation of energy efficiency of power-consuming facilities in industry, civil engineering, transport and electric power industry is the thermal testing. It makes it possible to select optimal thermal loads for facility functioning, to reveal defective units and to determine the degree of their hazard by signs of their overheating as compared with good-quality zones, to determine heat leaks through enclosing structures of buildings, etc.

Presently, thermal testing experiences the period of rapid development. It concerns the following:

- stock of testing equipment: from the simplest and relatively cheap available for the wide range of customers to expensive thermal imaging cameras for performance of unique researches;

- test objects with constantly extending range: in Russia, energetic examination of buildings prior their commissioning is introduced gradually in accordance with the state legislative base; testing of electric equipment and heating units, chimney flues, pipelines, etc. is carried out.

Unfortunately, testing is performed frequently by untrained personnel, which results in severe violations of equipment diagnostic procedures and issuance of incorrect conclusions. This situation is aggravated by the fact that normative technical documents on TT have gotten mainly out of date and by the extremely small number of testing methods available. Thus, requirements to personnel become stricter, while there are no educational institutions in Russia to prepare specialists on thermal method.

Scientific and Training Center "Quality" carries out training in the field of thermal testing, which allows specialists to obtain sufficient knowledge in order to work independently in the field of diagnostics of various construction projects, energetic and industrial facilities subordinated to Rostekhnadzor or other institutions.

Qualification of TT specialists working within the Center makes it possible to carry out training of personnel at the highest level taking into account development of the modern technological and instrumental base. Great attention is paid to methodological peculiarities of testing of various objects, elaboration of technological charts and practical studies.

In the field of certification, STC "Quality" possesses with elaborated programs and technical base for training personnel in theory, technology and practical procedures of thermal testing of various objects.

STC "Quality" is the single entity in Russia dealing with training of specialists in thermal testing and their certification in accordance with Russian and European standards for the wide range of objects, including civil engineering and electric power industry, as well as elaboration and attestation of methodological documents on the technology of such testing.