

1.4.42. SOFTWARE-HARDWARE COMPLEX FOR AUTOMATED PROCESSING AND ARCHIVATION OF KORS 2.0

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The report is dedicated to development of the software-hardware complex for automated processing and archivation of KORS 2.0 skiographs and implementation experience in Russian oil-chemical, oil refining industries, gas distribution and consuming systems.

The above mentioned complex was developed on technical assignment by GUP "MOSGAZ" and designed for quality control of welded joints in internal and external steel pipeline walls, units and parts of gas equipment. After the acceptance of "Safety rules for gas distribution and consuming PB 12-529-03" the KORS 2.0 complex was improved with respect to new requirements for radiographic testing.

Versions of program packages of the complex were developed and implemented allowing to perform quality control of welded joints in mainline and technological pipelines, steam and hot-water boilers, vessels operating under pressure, petrochemical storage reservoirs, gasholders, units and parts of oil-refining equipment.

The hardware component is represented by a PC, a specialized scanner designed for operation with x-ray films and peripheral units.

KORS 2.0 software includes the following:

- Data processing program (graphic module);
- Database;

– Training module (album). By means of the KORS 2.0 graphic module, an operator performs digitizing of a skiograph, selection of optimal parameters for interpretation of a skiograph, test of validation for interpretation according to GOST 7512-82 and interpretation in the "operator-program" dialogue mode. Defects allowability evaluation is conducted by means of corresponding universal sample of a radiograph. (e.g.: USHR-3).

Interpretation results of a skiograph are transferred from the graphic module to the database, where control protocols are formed automatically. The database is programmed with respect to normative documents regulating radiographic testing (GOST 7512-82, VSN-012, STO etc.) The database also stores information on objects under testing, contractor organizations, radiographers and welders, their validity periods and statistical reports (on volumes of performed testing, flaws, performance of each radiographer and welder).

For the purpose of radiographers' skill improvement, a training module "Album of skiographs with common welding defects" was developed.

KORS 2.0 complex has the TESTIMONIAL OF COMPETENCE № 03 3 027 in the system of "Rostekhnadzor" and the CERTIFICATE NDT N113.

KORS 2.0 complex was implemented in more than 50 industrial facilities of Russia, Kazakhstan and Turkmenistan.

In implementation of the complex by operating organizations a high reliability, rapid rejection of skiographs out of interpretation according to GOST 7512-82, convenient records and statistics keeping was noted which help to increase performance of operations.

Introduction of a technology and welders qualification monitoring system in a number of enterprises became another result derived from implementation of the system.