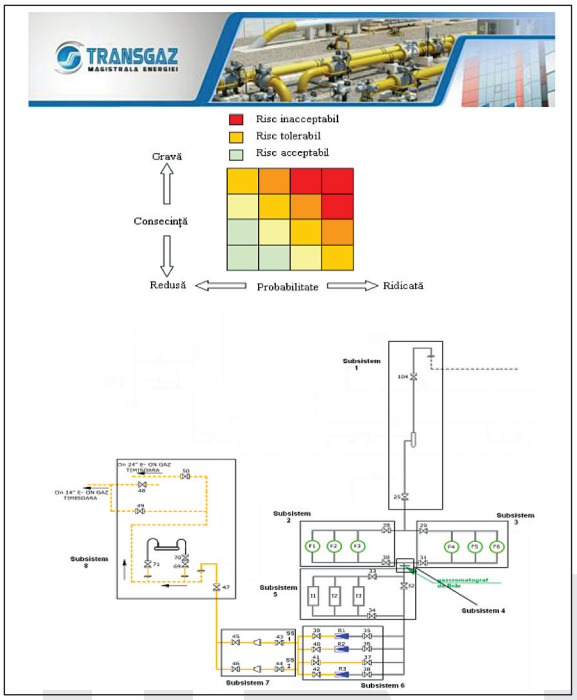
Feasibility study for the implementation and operation of a risk evaluation based management system at natural gas pressure reduction stations

Goal of the project:
Within the framework of a stable and risk free energy delivery system, ensuring the required safety level for natural gas transmission pipelines can be achieved through appropriate maintenance procedures. An optimization of this activity can be obtained if careful planning of inspections and components replacement is employed. Risk based inspection can offer significant cost reductions compared to preventive maintenance and increased safety in operation compared to reactive strategies. Therefore, the projects aims to develop a risk analysis method and to evaluate its implementation in the conditions specified by the beneficiary.



Short description of the project:
Rather than taking a turn-key solution approach and simply implementing an existing risk evaluation software, the project proposes the development of a methodology that is best suited to the needs of the beneficiary and can be introduced in a seamless manner, in line with existing maintenance procedures.

Project implemented by:
Faculty of Mechanical Engineering

Implementation period:
June 2012– December 2012

Results:
An original method was developed for evaluating risk levels at natural gas pressure reduction stations, that can be applied even with a minimum set of input data, does not require experience in failure mode analysis, can be used independently and combined with a dedicated software. Inspection intervals that ensure high safety levels were identified and proposals were formulated for improving maintenance activities.

Fields of interest:
Energy

Financed by:
National Gas Transmission Company Transgaz S.A.

Research team:
Project manager: Ioan LAZA,
Team members: Viorel Aurel ŞERBAN, Carmen OPRIŞ, Cosmin CODREAN, Andrei FERENCZ, Oana DULCA, Adrian IRIMESCU

Aplicability and transferability of the results: Application of the method in maintenance planning is foreseen in the near future.

Contact information:
E-mail: laza@mec.upt.ro, mmut@mec.upt.ro