LEAK REDUCTION
AT NATURAL GAS COMPRESSOR STATIONS

of gas transition system of UKRAINE

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Ukraine is located in the center of Europe and boarders Russia the east and Belarus, Poland, Slovakia, Hungary, Romania and Moldova in the west.
Gas transition system of Ukraine is the second on capacity in Europe after RAO Gazprom.
“Ukrtransgas” branch company

35 thousand km of gas mains

171 compressor stations
Branch Company "Ukrtransgas" is the main «gas bridge» between Russia - the greatest gas extracting country and consumers in the countries of Central and Western Europe.
“Ukrtransgas” branch company

190-200 billion m³ of gas
“Ukrtransgas” branch company

5 thousand km of gas mains
23 compressor stations
100-120 billion m³ of gas

management of Main Gas Pipelines

“Cherkasytransgas"

Comparative Volume of gas transition of Uktransgas and Cherkasytransgas, billion m³ per year

- Cherkasytransgas
- Rest of Uktransgas
“Ukrtransgas” branch company

management of Main Gas Pipelines

“Cherkasytransgas”

NARRATIVE PART
Management of Main Gas Pipelines “Cherkasytransgas”
Branch Company “Ukrtransgas”
National Joint-Stock Company “Oil and Gas of Ukraine”

1. Leak detection and measuring
2. Development of leak repair plan
3. Repair works
4. Summarizing

Leak Reduction at natural gas compressor stations

Before: 308
After: 42
management of Main Gas Pipelines

“Cherkasytransgas”
KREMECHUK Linear Management

20-100 billion m³ of gas
1 thousand km of gas mains
3 compressor stations

Compressor station
management of Main Gas Pipelines

KREMENCHUK Linear Management

Compressor station

leak detection before after
management of Main Gas Pipelines

"Cherkasytransgas"
three measuring techniques

- Leak measuring using Hi-Flow Sampler
- "Vent-Bags" method
- Leak measuring using anemometer
Leak detection

Leak measuring using Hi-Flow Sampler
management of Main Gas Pipelines

“Cherkasytransgas”

“Vent-Bags” method using calibrated bags made of anti-static plastic
Leak measuring using anemometer
Results of measurements

169 leaks with a total leakage of 2209 thousand m3/year were found at Zadniprovskaya compressor station.

112 leaks with a total leakage of 749,0 thousand m3/year were found at Kremenchugskaya compressor station.

The carried out analysis has shown, that 70 % of the total leakage at each site comes from 20 % of the leaking components.
The total leakage at two Compressor Stations was reduced by 1954 thousand of m3 per year that makes in money terms 101,3 thousand US dollars per one year at cost of gas of 51,7 US dollars for thousand m3.
OUTCOMES OF THE PROJECT

For the first time in Ukraine was conduct leak measurements using “Indaco” techniques.

To estimate existing leak rates on equipment of natural gas compressor stations.

Define the priority of components to be repaired and demonstrate feasibility of such repair.

The modernized “Indaco” instrument for leak measurement was bought at the expense of grant.
OUTCOMES OF THE PROJECT

Within the project the gas leaks has been measured twice before and after repair.

**Initial** leak rate measurements have allowed:
- to create leak database.
- develop norms of technological leaks.

Measurements conducted **after repair** have allowed:
- to define efficiency of repair.
- provide the internal monitoring system.

The article about the project is placed on “Ecolinks” site:
[www.ecolinks.org](http://www.ecolinks.org)
PROMOTION OF THE PROJECT EXPERIENCE

Implement the experience of “Cherkasytransgas” in all divisions gas transition system of Branch Company "Ukrtransgas".

For last two years gas leak measurements have been done at 23 compressor stations, linear valves and gas distribution stations, after repair at 8 compressor stations.

In future we plan to conduct measurements at all compressor stations, gas distribution stations and linear valves, to create database for all the leaks.

Seminar after the project

Booklet about the project
Thank you!