- g) the ratio of urban population to the white stork is positive in 85% and negative in 17% of cases:
- k) the ratio of rural population to the white stork in 79% positive, and only 3% negative;
- 1) on the question, of where winters stork, answered correctly only 30% of students:
- m) the final question was the value of the white stork for man and nature: the positive value of 98% but 2% of people said negative value, stating the fact that he is a carrier of many diseases of both animals and humans.

Having studied references (Samusenko, I. E., Handogiy, A. V.) and having conducted own researches, it is possible to draw a conclusion that the number of population is stable. The current state of population of a white stork in the Minsk district of the Minsk region doesn't cause alarm.

## Belyatskaya E.1, Kolpashchikov V.2

<sup>1</sup>International Sakharov Environmental Institute of Belarusian State University, Minsk, Republic of Belarus;

<sup>2</sup>Institute of heat and mass transfer named after A. V. Lykov of the National Academy of Sciences of Belarus, Minsk, Republic of Belarus

## ASSESSMENT OF TECHNOLOGICAL LOSSES IN THE SUPPLY PROCESS GAS

One of the most important tasks of the enterprise is reduction of losses of Liquefied Petroleum Gas (LPG). To explore opportunities to reduce losses of gases in the work produced by quantitative assessment and analysis of losses in each process step in the transportation of gas to consumers by the example of gas pipeline branch, a gas distribution station (GDS) and petrol station for state production association (SPA) "Beltopgaz".

Loss – the amount of gas inevitably lose the technological process of collection, preparation and transportation, in connection with impossibility of implementation of these processes without the losses at the present level of equipment and technology and in full compliance with existing norms, rules and regulations.

Describes the main processes that lead to loss of natural and liquefied gases are: Gas consumption for technological needs. Such consumption occurs:

- when refueling odorization installations;
- when blowing dust (freezing, filters, etc.);
- purge areas of communications GDS;
- grazing areas of communications GDS;
- when carrying out the bombings (checks operation) safety valves on GDS;
- with the loss of natural gas pipeline-branch and GDS;
- if technically unavoidable losses of liquefied gas at the petrol station;
- in emergency situations in the gas distribution systems (unexpected loss);

- the through damage;
- when emissions of combustion products.

The results of the work prepared instructions for the computation of norms of losses of natural gas during exploitation of trunk gas pipeline-tap and GDS, as well as instruction on calculation of norms of losses of liquefied natural gas for filling stations which are on balance of gas distribution organizations of the "Beltopgaz".

## Bezzabava O., Lobkova O.

East State Inspectorate on Nuclear and Radiation Safety of State Nuclear Regulatory Inspectorate of Ukraine, Kharkiv, Ukraine

## DEVELOPMENT OF STAFF QUALIFICATION IN THE SPHERE OF RADIATION SAFETY

Solution of the problem connected with ensuring of the person radiation safety (both the patient, and the staff which works with sources) during carrying out medical diagnostic researches and treatment with use of ionizing radiation sources depends on a set of factors.

Besides observance in a medical institution of three radiation safety basic principles, ensuring protection means and presence of an qualitative equipment for carrying out diagnostics and therapy, and also observance of conditions and correctness of its operation; observance, not exceeding, and also restriction of the staff exposure levels and patients' doses; correctness of medical exposure's procedure justification and correctness of procedure's technology carrying out; presence and using of individual protection means from radiation's influence etc.

In other words, radiation safety as a whole depends on existence and functioning of quality assurance system of exposure's procedures and, naturally, control of its observance.

Despite importance of all quality system's components of carrying out medical exposure procedures, nevertheless on the first place in ensuring of radiation safety it is necessary to put competence level of the staff.

In practice, very often we face that at carrying out procedures of beam diagnostics, and more rarely at treatment, the staff sometimes ignores all requirements of radiation safety and protection optimization as own, so and for patients' who, in turn, without knowing all possibilities of protection optimization and requirements to performance of exposure procedures, can't check own rights to protection from ionizing radiation. Unfortunately, in most cases, such violations of requirements are connected with elementary absence of staff's knowledge on radiation safety.

In 2010 in the frames of the cooperation between the State Nuclear Regulatory Inspectorate of Ukraine (SNRCU) and the Swedish Radiation Safety Authority (SSM) by representatives of 8 regional inspections of SNRCU was developed the program and contents of the course "Radiation safety and quality assurance in medical practice" based on Ukrainian and international regulatory documents on radia-