

**INSPECTION OF LEAK TIGHTNESS OF TECHNOLOGICAL OBJECTS, TECHNOLOGICAL
INSTALLATIONS AND PIPELINES TO TRANSPORT LIQUIDS AND GASES USING THE METHOD
RADIOTRACERS**

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Since many years INCT is specializing in the inspection of leak tightness of technological objects, technological installations and pipelines to transport liquids and gases using the method radiotracers.

Our teams consist of specialists with many years' experience and authorization of the National Atomic Energy Agency (PAA). We have at disposal specialized devices to generate radiotracers in field conditions in the form suitable to label various media, dosing and measuring apparatus including detectors enabling the performance of inspection of leak tightness inside pipelines. We also have at disposal special adsorption materials suitable for the applied tracers.

The offered method is based on the introduction most frequently of methyl bromide labelled with ^{82}Br into the inspected object. The radiotracer after being mixed with inspected or working medium is dislocated to leakage under the influence of pressure (of any value, fixed by the customer) in the examined object and is adsorbed either on natural adsorbents (soil, thermal insulation) or on the artificial ones (special materials put prior to inspection). In the case of soil, desorption of the tracer occurs followed by its migration toward the soil surface.

Radiometric quantity survey, which can be attained also through the soil layer 5 m thick, allows to ascertain leakages and their precise localization.

In the case of inspection of gate valves and exchangers adsorbent are not used. We offer the inspection of leak tightness and localization of leakages by means of radiotracers for the following technical objects:

- underground pipelines (\varnothing 200–600 mm) to transport liquid and gases, equipped with cleanout chambers; the sensitivity being 0.5 dm³/h for liquids (the smallest recorded and localized leakage) and 5 g/h for gas,
- underground pipelines of diameter greater than 600 mm, with a sensitivity not worse than 1.0 dm³/h for liquids and 10 g/h for gas,
- underground and ground pipelines to transport liquids and gases without cleanout chambers with a sensitivity 1.0 dm³/h; no limits to dimensions,
- gate valves in pipelines to transport any media,
- underground tanks and bottoms of ground tanks with a sensitivity depending on the size of a tank,
- apparatus and installations of chemical and petrochemical industries with a sensitivity of 30 cm³/h. The inspection is performed without disassembly of internal and external linings; no scaffold is necessary,
- other objects, after the conditions and parameters of inspection being agreed with the customer.

We guarantee the attaining of the given sensitivities of inspection. Cost of the performance of leak tightness with radiotracers is competitive with the traditional methods for that type of inspection and every time is negotiated with the customer.

The methods applied by us in Poland are authorized by the Office of Nuclear Safety. The long experience attained during performance of a number of expertises for the objects in the Polish Petroleum Concern in Płock, Gdańsk Refinery, Enterprise of Petroleum Pipelines Exploitation in Płock and others confirms high profitability of the offered method.