



**ANALYSIS OF THE CAUSES OF ACCIDENTS IN GAS PIPELINES
TRANSPORT, NATIONAL ECONOMY AND MAIN PIPELINES**

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ANNOTATSIYA

Currently, the protection of underground gas pipelines from corrosion is considered one of the pressing problems, this article brings theoretical and practical solutions to the protection of gas pipelines from corrosion.

Keywords

corrosion, pipes, physical and chemical properties, exploitation of main gas pipelines.

Introduction: In local and foreign literature, great attention is paid to the problems of studying the causes of corrosion in the main underground gas pipelines. In the process of studying literature, the work of specialists was studied, the work of which is presented below. Gizzatullin [1] and A.N. Ulikhin [2]. In their work, electrochemical corrosion and protective processes are fully presented, recommendations are given on methods of corrosion testing. In the literature, the authors argue that the corrosion process is irreversible in its nature, but such a type of metal destruction of the structure can be slowed down by the use of Corrosion Protection agents. Currently, textbooks for Vocational Education R.D. Angala and M.L. Medvedeva [3]. The textbooks provide answers to questions about corrosion-based chemical processes, consider factors that determine the corrosion resistance of structural materials [4]. The influence of soils and soils on the operation of pipes is analyzed, the role of individual components of the media is considered. R. Angal considers in detail the different types of protective coatings in terms of their physical and chemical properties, methods of their application, as well as advantages and disadvantages from the material side. M.L. Medvedeva In his textbook, Medvedeva analyzes the statistics of malfunctions in the main gas pipelines in the 80s and 90s of the last century [5].

V.I. Khizhnyakov [6]. He pays great attention to the problem of using underground pipes and related corrosion processes. Sayfutdinov studies the deformation of the insulating coating of the underground pipeline under the



influence of soil, predicts the anti-corrosion effect of protective coatings and the degree of influence of coating properties on the corrosion rate of the protected metal. Considering the accelerated evaluation of protective coatings used by Japanese companies Nippon Steel and Sumitomo Metal Jnd, they also proposed and improved a method for predicting the long-term strength of polymer coatings of pipes in working conditions.

Metal corrosion is thus a physicochemical process that leads to the death of a metal or a change in its properties as a result of the chemical or electrochemical action of the environment. In the process of operation of main gas pipelines, all structures located in the linear part, in the technological pipeline plot, as well as tanks affected by factors of the external and internal environment, corrosion processes occurring in the metal lead to metal loss.

The main pipeline transport is one of the most important and indispensable components of the Har-one fuel and energy complex. On the territory of our country, a single unified gas supply system (Uztransgaz) was created. The total length of the pipelines is 13.2 thousand km. With the help of trunk pipeline transport, about 98% of the gas is transported. Transportation of gas by pipelines has a significant advantage over other types of transport, therefore, pipe transport is widely used for these purposes in all countries of the world.

The transportation of hydrocarbons by pipeline annually brings a large part of the state budget to our country due to the export of raw materials, and is also a guarantee of the energy security of the regions of Uzbekistan and consumer countries.

Facilities for transporting hydrocarbons by pipeline fall into the category of hazardous objects, the failure of which, as a rule, leads to large material and environmental losses. For the pipe management organization, it is important to take other measures aimed at ensuring their operational reliability, accounting for financial costs and maintaining reliability in order to assess the technical condition of the facilities. Thus, ensuring the reliability and safety of trunk pipeline transport systems is the most important priority in ensuring stability and economic growth.

It is known that the reliability of pipeline systems directly depends on the appearance of a large number of defects, accidents, etc. Therefore, more attention should be paid to pipe systems to increase the reliability of pipe operation.

At the moment, the main part of the pipeline fund (60-70 percent) has completed the planned resource.

According to recent research, the main reasons for the failure of the main oil and gas transport facilities are:



- violation of the requirements of the norms and rules for the design and construction of pipes, deviation from Project Solutions and poor quality of structural elements used - 10%;
- unprofessionalism of workers and specialists-10%;
- external influences (cataclysms, emergencies, intentional / involuntary damage, attachment, etc.) - 15%;
- corrosion effect-45%.

As you can see, the main reason for the failure of trunk pipes is the destructive effect of soil corrosion (at least 50% of the total number of accidents and malfunctions). Thus, the degree of reliability of gas pipelines directly depends on the degree of corrosion protection of main gas pipelines (MG). In addition, the corrosion factor, unlike other factors, can be minimized through the targeted actions of the operating organization (corrosion protection service) and timely diagnostic examinations of the pipeline.

Result: In the process of corrosion, oxidation of equipment occurs. The obtained chemical compounds, metal oxides, are the most stable for most metals.

Corrosion is always the result of changes in metal properties. There are two main problems of pipe corrosion:

- 1) possibility of exploitation of metal affected by corrosion
- 2) pipe line metal corrosion prevention

One way to prevent corrosion is to switch from a known metal/intermediate system to another system where the corrosion process is thermodynamically impossible, such as changing the qualitative or quantitative composition of the environment. For an existing trunk pipe system, this is physically impossible.

As a result, the only way to protect existing pipes in the design and use process is to reduce the rate of corrosion development to a value where changes in the properties of materials do not affect the reliability of operation of all metal structures. The choice of a set of protective measures largely depends on the development of the process and the nature of its manifestation.

Conclusion: in conclusion, as a result of the studies and studies carried out, such magnitudes as the causes of accidents in main pipelines and factors affecting the rate of corrosion and corrosion of underground gas pipelines were studied.

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