

MODERN TECHNIQUES AND TECHNOLOGIES OF CLEANING HYDROTECHNICAL INSTALLATIONS FROM SLUDGE

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Абстрактный:

В данной статье представлена информация по изучению современных приемов и технологий очистки ила, скопившегося перед гидротехническими сооружениями.

Ключевые слова: эксплуатация, ирригационные системы, мутные отложения, очистка от мути, дноуглубительные работы.

Abstract:

In this article, information is provided on the study of modern techniques and technologies for cleaning sludge accumulated in front of hydrotechnical structures.

Key words: exploitation, irrigation systems, turbid sediments, turbidity treatment, dredging.

Enter. The sedimentation of turbid particles contained in running water in front of hydrotechnical structures complicates the processes of exploitation of existing hydrotechnical structures on earth. For example, sedimentation in the basin of water reservoirs causes its volume to decrease, and sedimentation in front of hydrowells causes an excessive rise of the water level in the upper part of the structure and destroys the free control of the valves.

Today, our Republic also has a powerful water management complex, which includes 75 large canals with a total water consumption of more than 2500 m³/sec, 56 water and 25 flood reservoirs with a total volume of 20 billion m³, more than 117 thousand in 230 inter-farm irrigation systems. there are hydrotechnical facilities, 32.4 thousand km of inter-farm canals.

Every year, millions of m³ of muddy sediments that settle in front of the existing irrigation systems and structures in our Republic are cleaned mechanically and by hand.

Problem setting. Cleaning of the silt settled in the irrigation system and water reservoirs is a very complicated process, because the agriculture of our republic has switched to the cultivation of cotton and grain crops.

As for water reservoirs in our republic, it is impossible to clean the reservoir basin with the melioration techniques available in our republic due to the fact that there is always water in their basin. As an example, we can look at the situation of the Zomin reservoir in our Republic

Research method. Conducting field research and analysis of the used literature on the removal of mud-chukindi.

Research results. Zomin Reservoir [Figure 1]. It was built in the Zominsoy basin, and with its help, 51.0 million m³ of water can be collected. 7820 hectares of land can be irrigated with the water collected in the reservoir. The Zomin reservoir was built in 1975-1987 and has been in use for 32 years.

As a result of this, about 30% of the dead volume of the reservoir was filled with mud as a result of mud settling in the reservoir basin. Based on foreign experience, it is possible to clean the sludge that has settled in the reservoir basin, when the reservoir level drops, using submersible pumps (picture 2) or an electric dredger (picture 3).



Picture 1 Groundwater Picture



2 Diesel Zemsnaryad warehouse view



3 – picture. Electric drager.

These devices can clean up to 6 meters deep. Power is from 74 to 325 hp. The water output volume of the pump is 34 - 119 m³/h. This device can also be controlled remotely. In particular, it can work in a harsh environment. Devices of this type are considered suitable for removing sedimentary stones under water. In the spring of our republic, in front of the hydroelectric stations in the foothills of our republic, there are cases of large amounts of turbidity. As an example, Figure 4 shows the condition of the Karshi hydroelectric power plant built in Kashkadarya after vegetation. Today, the

sediments deposited in the Karshi hydroelectric plant are being cleaned with the help of low-efficiency landmines, excavators and bulldozers. The cleaning of the riverbed of the Karshi hydroelectric plant is carried out every year if foreign universal excavators with high productivity and which can work underwater are used.

Summary

If we use foreign equipment and technologies to clean the turbidity that sinks in front of the irrigation networks and hydrotechnical facilities in our country, we will be able to perform the work in a short time with high quality.

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