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THE IMPORTANCE OF HYDROTECHNICAL STRUCTURES IN THE DEVELOPMENT OF THE WATER SECTOR OF THE REPUBLIC

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Abstract. In this research work, work has been carried out to ensure the safety of the hydrotechnical facilities as well as to protect them from possible incidents within the scope of their prevention, that is, Measures for the provision of modern sensitive equipment have been taken into account

Keywords: technogen, hydraulic engineering, construction, project, safety, object, event, risk, analysis, design, construction.

1. INTRODUCTION

Today, great attention is paid to safety, practice shows that hydraulic structures are the most common economic, environmental and socially complex and responsible engineering facilities. The safety of hydraulic structures is essential. A lot of work is being done in the process of risk analysis and factors related to accidents and management of hydraulic facilities. It is expedient to use new modern technologies in hydraulic structures. It is very important to provide sensitive equipment and prevent accidents.

2.MAIN PART

Water is the main source of production, health, decent living and human development in Uzbekistan, as well as around the world. The economy of Uzbekistan, the stability of the environment largely depends on the available water resources and their quality. Water scarcity is one of the main factors that can affect the sustainable development of Uzbekistan. The climate, geographical and demographic conditions of Uzbekistan have required the development of water management, hydraulic engineering and hydropower since the beginning of mankind. On the territory of the Republic of Uzbekistan, several thousand years ago, the construction of hydraulic structures for the discharge of water and its proper

distribution began. In the VI-XVII centuries in the Syrdarya and Amudarya basins Zakh, Iskandar, Bozsuv, Salar, Khan, Polvon, Shavot, Gazavot, Dargom, Narpay and Shumanay canals, Khan and Abdullakhan dams were built and 1.6-1.8 million hectares were irrigated. cultivated. The development of large areas through the construction of main canals began in 1892 with the construction of the old Zang Canal. Since 1939, dozens of main canals and reservoirs have been built in the Republic. For example, the Greater Fergana, Old Anhar, Karshi and South Mirzachul main canals and the Kattakurgan (1941) and Kamashi (1945) reservoirs were built. As a result of the work carried out in the field of water management construction, today the Republic has an irrigation and land reclamation infrastructure that can solve the problems in the field of water management. Today, the Republic has a powerful water management complex. It includes 75 large canals with a total water consumption of more than 2,500 m3 per second, 55 water and 25 reservoirs with a total volume of about 20 billion m3, more than 117,000 hydraulic structures in 230 inter-farm irrigation systems, 32,400 km of inter-farm canals. , 176.4 thousand km of internal irrigation networks, 33 thousand km of inter-farm, 106.3 thousand km of internal drainage networks, about 13 thousand pumping units, more than 2 thousand irrigation wells, more than 4800 vertical drainage wells. As a result of the obsolescence of the existing irrigation networks in the country, there are difficulties in irrigating 830,000 hectares of land. In addition, work is underway to improve the reclamation of 1.3 million hectares of irrigated land, the gradual cleaning of 18,000 kilometers of collectors and drainage networks, the renovation and repair of 103 large, 720 medium and small water facilities. In our country, special attention is paid to the development of arable lands through the expansion of the network of reservoirs for the efficient use of land resources. In 2018-2019, Parkentsoy, Qizilsoy and Toshtepa reservoirs with a total capacity of 44 million cubic meters were built in Tashkent region. Thus, it will be possible to develop 5,000 hectares of arable land in Parkent and Ahangaron districts. Karaman Reservoir has been launched in Forish district of Jizzakh region, 20,000 hectares of land have been developed. After the

completion of construction of Guldara, Ayaqchisoy and Bulungur reservoirs in Kashkadarya region, Samarkand region, it will be possible to develop an additional 2,000 hectares of land and improve the water supply of 319,000 hectares of used land. In accordance with the state program for the development of irrigation networks and improvement of reclamation of irrigated lands in 2018-2019, in recent years, 1,086 km of canals were concreted and 661 km of canals were rebuilt. In addition, 109 large hydraulic structures were built and new pumping stations were installed. As a result of these measures, the water supply of 1.2 million hectares of land has improved. The effective use of water resources and their protection, prevention and elimination of harmful effects of water depend on the potential of specialists working in government agencies and economic management bodies. Construction and reconstruction of hydraulic structures As a result of long-term operation of hydraulic structures, the obsolescence of devices, equipment and facilities installed on them, changes in the design parameters of the facilities. To solve these problems, the following issues need to be addressed:

1) the issue of further improving the requirements for the agreement between the organizations developing projects for the construction or reconstruction of hydraulic structures and the specially authorized bodies exercising state control;

2) control - problems with measurements;

3) the lack of spare materials for the prevention of accidents at hydraulic structures;

4) in some cases, the skills of employees in the funding of hydraulic structures are not at the required level;

5) serious damage to a number of hydraulic structures as a result of illegal quarrying activities in rivers, canals and illegal construction works in coastal areas;

6) the occurrence of accidents at pumping stations as a result of regular power outages without warning.

These conditions, on the one hand, lead to significant material damage, on the other hand, adversely affect the continuous and guaranteed operation of facilities, and

the most serious consequence - the aggravation of the risk of accidents at hydraulic structures. As part of the capital and investment program, about 300 billion. sum and 100 mln. A number of works are being carried out at the reservoirs of the Republic, including reconstruction works at the Takhiatash, Sherabad and Tuyamuyin hydroelectric power stations, Mangot-Arna, Morgunenko and Tashkent canals, 362 PK to 554 PK of the Kegeyli canal, at the confluence of the Karasuv and Zang canals. water distribution facilities, dams protecting the banks of the Aravansoy River, Sichankul and Ozorny reservoirs. on construction works, on reconstruction works on Guldara in Yakkabag district, Kuksaroy in Khatirchi district, Bogimozorsay in Bakhmal district, Ayakchobsoy in Qushrabot district, Kamangaronsoy in Urgut district, Khangaronsoy in Boysun district; , Construction of Alat main pumping station in Bukhara region, Rehabilitation of Alat auxiliary pumping station, Measures to improve the use of the Kyzylsu reservoir, increase the capacity of the Chartak reservoir in Chartak district, concrete pavement of the Parkent main canal, modernization of Kamchiksoy HPP on the Ahangaron river, Tashkent Work on strengthening the banks of the Burdjar canal in the city of 47 + 00 PK to 52 + 10 PK, the transfer of water from the Sukh River in Sukh district through the Sukh reservoir, modernization of Tupolang hydroelectric power station, reconstruction of Navoi and Uchkara pumping stations in Navoi region. iklash Foreign experience in the reconstruction of dams Although the strength and safety of many reservoirs around the world, built and used in the XIX-XX centuries, are unquestionable, the following factors affect their reliable operation:

1. Uneven drownings that can occur in the body of the fetus;
2. Parameters affecting the strength of the dam banks;
3. The state of tension of the body of the native;
4. Influence of flood waters on the process of filling the reservoir;
5. Internal pressure effect.

As a result of suffocation, which occurs as a result of leakage of filtration water from the body of the tugan, uneven sediments at the tugan and washing on the lower

edge are observed. An increase in the amount of filtration water leaking from the birth body can be caused by problems with the anti-filtration core or screen, teeth, and drainage devices installed in the birth body. If there are no drainage networks in the valley, its construction will take a lot of money and time. In this case, the reservoir should be replenished and operated under enhanced control until reconstruction is carried out. To ensure the strength of the steep or wash-prone lower bef shores, it is necessary to reduce the slope of the shoreline and create coverings with a rock-cutting path. In some cases, a large amount of sinking or erosion is also observed in the nuclei built at the bottom of the reservoir. Foreign researchers have suggested that intensive filtration currents and suffocation may be observed in the body of the reservoir due to the poor mixing of the soils used in the construction of the reservoir with the materials used in the construction of anti-filtration devices and drainage facilities. For example, Vaughan, Chalmers, and McKay (2000); Banyard, Coxson and Johnston (1992). Macdonald, Dawson i Coleshill (1993) and Chapmers, Vaughan i Koat (1993) in their scientific articles addressed the issues of modernization and reconstruction of the reservoir dam. Foreign researchers have suggested closing the cracks in the body of the tuon, which is undergoing intensive filtration, with concrete covers. When reconstructing a soil embankment, the soil embankment (roof) mark is raised, in most cases, without emptying or partially emptying the reservoir. Lifting the tugan begins with the lower slope of the tuon. This is possible when the reinforcement installed before the high slope reconstruction is performing its function, and in this case it is possible not to drain the reservoir from the water. The various schemes of lifting the ground beams are shown in Figure 1.1. The female of a homogeneous tuft of clayey soils is raised by a ground screening to the re-infested part of the tuft. In this case, the soil with a small filtration coefficient is poured on the soil screen (1.1, Fig. A). In this case, even after reconstruction, the old drainage system is used. Slab contraction joints should intersect at the openings for columns and should intersect at the openings for columns (Fig. 1.1, b, c, d). If screens and diaphragms are made of non-ground materials, then they should be

covered with asphalt concrete, reinforced concrete, polyethylene film, etc. (Fig. 1.1, e, j). Tugs with flattened high slopes raise the water level in the reservoir to the level of dead volume, pour soil on the lower and upper slopes, and strengthen the upper slope (Fig. 1,1, z). If the bridge to be reconstructed has a flatbed lower slope, then the upper slope is poured over it, and the lower bank is tilted (Fig. 1.1, i). Homogeneous ridges built of sandy soils, when their drainage can no longer be used, a new drainage is built and rises from the lower slope. (Figure 1.1, k). It is possible to build a concrete wall or paraped, which extends downwards from the ridge, when lifting the ridges a little (several meters), such work was done at the Kosonsoy ridge (Fig. 1.1, l). The Tadjen Tukai urkachi also climbed the lower slope, pouring extra soil. In this case, it is possible to build a parapet (Fig. 1.1, m). The combination of parapets or dowels with the above-mentioned methods of lifting beams can also be used in practice. Thus, in order to improve the technology of lifting the ridges, it is better if the soil rises from the lower slope of the ridges. In this case, the upper slope is taken as steeply as possible. The plant layer on the contact surface is removed and the surface is leveled, so that the soil, which is shed first and foremost, is well connected with the shed soil. The drainage system is left as unchanged as possible. In this case, the lower bef is provided with water outlet. It is necessary to maintain the integrity of the anti-filtration elements, especially the unfinished part of the dam, the sinking is carried out with reliable contact. The option to be reconstructed should be economical and reliable. An example of the reconstruction of a groundwater dam is the increase in pressure resistance of the Chernorechinsk Reservoir (1983). This working project was developed by Ukrgiprovodkhoz. Reconstruction was carried out in order to increase the volume of the reservoir, the reservoir will be used for water supply and irrigation. As a result of the project, the negative environmental situation has also been eliminated. Raising the dam height from 28 m to 36 m doubled the size of the reservoir. Birth before reconstruction

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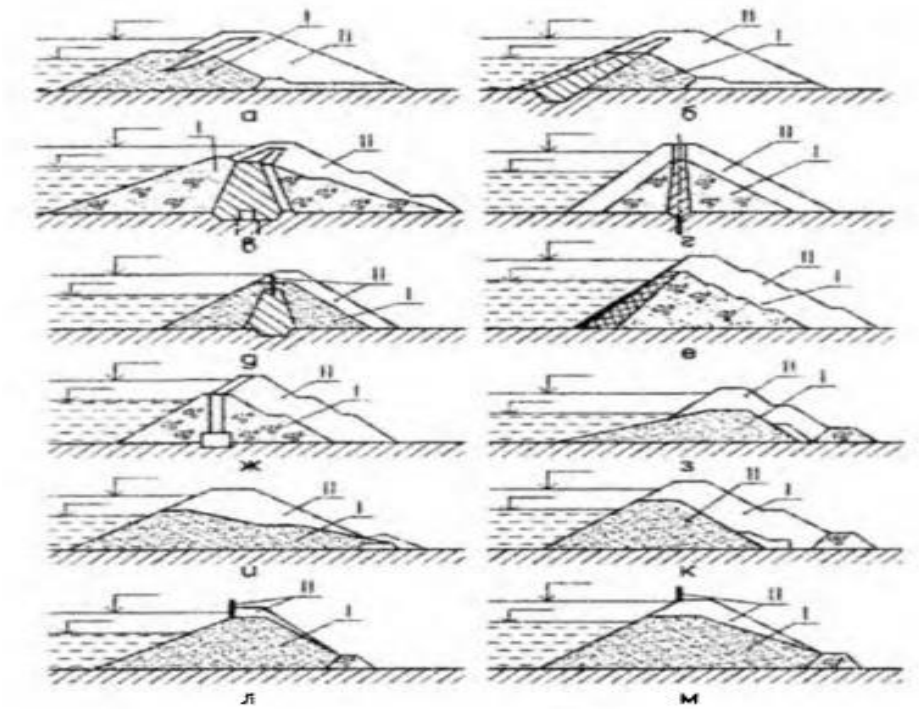

Figure 1.1. Schemes of lifting the ground piles:

a homogeneous tugan from a-glinal soils; b- with screen; v-stone fabric with core from ground materials; g-with the core when the soil is poured from the lower and upper slopes: d-with the core from the lower slope when the soil is poured and dried in the female zone; with a screen made of non-e-ground material; with j-diaphragm; i-bearing homogeneous with a high slope; l-unisexual tugan, which does not require bed rest; m-bottom slope is homogeneous with a large coefficient; I-old tuon; The ascending part of the II tuon.

At the head of the Tezokar, a 7.7 m high culvert was built. In particular, the pressure dam was constructed in small sections (up to 50 m) with a depth of 6 m, as the filtration water was flowing rapidly. The flood was carried out through a concrete dam with an existing drainage and a pre-flood dam under construction at its head. A small flow was carried through the backup pipe of the water intake. In order to prevent further shifts during the reconstruction of the dam, the sand, cement mixture containing 1: 4: 1.34 (cement brand M400: sand: water) was sent under pressure and the stone pile was rounded. The work carried out allowed to prevent the formation of

local deformations, ensured reliable operation of the screen and improved the temperature regime of the structure. During the reconstruction, the drainage ditch also rose to 1 m. This allowed to increase the volume of the reservoir by 4 million m^3.

3. CONCLUSION

In short, the use of modern technologies in hydraulic structures allows you to build fast and high-precision, durable, environmentally safe and convenient structures. Only in this case, all materials used for the construction of hydraulic structures must have appropriate certificates and sanitary-epidemiological recommendations.

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