

THE IMPORTANCE OF AUTUMN AND WINTER EVENTS IN IRRIGATION CANALS

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Abstract

The autumn-winter implementation of the planned activities on the irrigation canals will create good conditions for harvesting next year's harvest on irrigated areas. By clearing the irrigation nets from dirt and sediments, various plants and their debris, as well as increasing the strength of their slope, we will achieve the smoothness of waterways and efficient use of water. If we repair hydraulic structures and water measuring points in irrigation networks, we can correctly distribute water and accurately calculate the amount of water used for irrigation.

Keywords: vegetation, irrigation canal, hydraulic structures, operation, turbidity, water metering, water, soil.

At the end of autumn, the results of the work done during the growing season will be summed up, and plans for the next year and actions to be taken will be determined. One such measure is the preparation of irrigation canals, structures and equipment for next year's harvest. To prevent accidents in hydraulic structures of irrigation canals, it is necessary to constantly monitor their technical condition in order to eliminate them in a timely manner. Since visual observations are simple and convenient, they can always be carried out quickly at any object. Based on their results, if necessary, additions and corrections will be made. Based on the observation results, measures will be taken to plan preliminary repairs during the operation of irrigation canals and hydraulic structures.

To put into operation irrigation canals, their structures and equipment, their operators in the autumn-winter period must take the following measures:

- removal of deposits and various plants;
- bring the channel section to the design position and increase the strength of its slopes;
- rehabilitation of dams in need of repair;
- repair of hydraulic structures, water metering units, roads, communication networks and auxiliary structures;

- Equipping water intake facilities with electromechanical equipment.

Cleaning of dirt and various plants. Sludge removal in any irrigation system is a constant challenge. In particular, it is necessary to regularly clean most of the canals that receive water from the Amu Darya. The methods for removing deposits accumulated in the channels depend on the amount of such deposits.

Mechanized brigades will be created to clean large canals, ditches from mud and various vegetation, and all work will be carried out in a mechanized way. Dirt can be removed from small canals using compact equipment or manually. In some cases, sludge is passed through a stream of turbid water, causing the sludge to be dumped into a field or landfill. It is better to clean the mud to the canal bank and the surrounding area rather than direct it downstream. Regardless of the method used, when cleaning irrigation canals, it is necessary to bring the cross-section of the canals to the design position, increase the strength of its slopes and take into account the calculated hydraulic dimensions. Failure to do so will result in continued maintenance of the existing canal edge due to erosion. A channel with a very wide or very shallow bank will accumulate turbidity and restrict water flow. Thus, a properly designed and maintained canal will carry the required flow without excessive flushing of the sidewalls and accumulation of silt in the riverbed.

There must be a road for vehicles to operate and maintain a canal or drainage system. Roads should be located so that technical personnel have easy access to inspect the canal, maintain it in working order and use equipment.

The width of the road, the width of the top of the canal, and the size of the equipment used by the service provider may be sufficient. It is also desirable that the width is sufficient for the movement and maintenance of machinery and equipment. Dirt roads can be scraped, if possible with bulldozers, and smaller roads by hand.

Repair of hydraulic structures, water metering units. It is known that any hydraulic structures, as well as their equipment, wear out, rust and wear out. However, their timely identification and correction requires constant vigilance in order to prevent an escalation of the situation. Significant damage can result from failure to prevent structural damage, concrete collapse, delays in protecting foundations and walls from washout, or immediate action. Many problems are not serious if they are resolved at the first warning, and if the problem is not resolved quickly, it can lead to catastrophic consequences and great damage. Therefore, to carry out the autumn-winter events and maintain them in working order, it is necessary to carry out the following repair and restoration work at the water distribution facilities:

- all metal structures, seals (grooves), coatings around the gate will be checked, and damaged areas will be repaired by welding;
- seals are checked and worn ones are replaced;
- hydraulic bolts are checked and tightened;
- rusty surfaces are cleaned and an anti-corrosion coating is applied;

- The lifting screws are lubricated;
- inspection of electrical equipment, opening and lubrication of the engine, cleaning the contacts;
- oil is poured into the gearbox and bearings are lubricated;
- Spare parts are checked and checked for serviceability.

After all the gates have been repaired, they are closed and opened several times to check their functionality.

To put into operation water metering points in canals:

- improvement works;
- repair of service bridges;
- tuning rappers;
- The water level rails must be put into operation (painted, repaired).

Equipment associated with equipping water intake facilities with electromechanical equipment and improving the operation of irrigation networks consists mainly of mechanical, electrical, hydraulic and electronic means. Many of these devices are highly specialized and important to practice. Special conditions of use and operation are usually described in the manuals and manuals of the manufacturer.

Equipment should not be formally used or handed over to a service crew until it has been satisfactorily tested and operated as intended.

In conclusion, it should be noted that the implementation of the planned activities in the autumn-winter season will prepare the ground for harvesting next year. The evenness of waterways and efficient water use can be achieved by cleaning irrigation networks from silt and various vegetation and increasing the strength of their slopes. If we repair hydraulic structures in the irrigation network, water measuring points, water distribution will be carried out correctly and it will be possible to accurately calculate the amount of water used for irrigation.

Timely implementation of the above measures will ensure rational and efficient use of water in the coming year, provide consumers with reliable and sufficient water and ensure a bountiful harvest next year.

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