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**ASSESSMENT OF THE RELIABILITY DURING OPERATION OF
"SOUTH SURKHON" WATER RESERVOIR.**

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Annotation. Today, construction of water reservoirs for the development of agriculture, obtaining electricity, development of industry, protection of residential areas from floods, preservation of drinking water reserves, and ensuring the proper use and safety of existing water reservoirs is an urgent issue.

The purpose of the research work is to study the technical condition of the structures in the South Surkhan reservoir and their shortcomings, to study the working conditions and shortcomings of the water transfer structures in the South Surkhan reservoir in field conditions, and to develop recommendations for their safe and reliable operation.

Key words. Reservoir, dam, deadly spillway.

**“JANUBIY SURXON” SUV OMBORI EKSPLOATATSIYA DAVRIDAGI
ISHONCHLILIGINI BAHOLASH**

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Аннотация. Bugungi kunda qishloq xo‘jaligini rivojlantirish, elektr energiya olish, sanoatni rivojlantirish, aholi yashash punktlarini seldan himoyalash, ichimlik suvi zahirasini saqlash kabi bir qator ishlarni amalga oshirish uchun suv omborlari qurish va mavjud suv omborlaridan to‘g‘ri foydalanish va xavfsizligini ta‘minlash dolzarb masala hisoblanadi.

Tadqiqot ishining maqsadi Janubiy Surxon suv omboridagi inshootlarning texnik holati va ulardagi kamchiliklarni o‘rganib chiqish, Janubiy-Surxon suv omboridagi suv o‘tkazish inshootlarining ishlash sharoitlari, kamchiliklarini dala sharoitida tadqiqot qilib, ularning xavfsiz va ishonchli ishlashi bo‘yicha tavsiyalar ishlab chiqish.

Калит со‘злар. Suv ombori, to‘g‘on, halokatli suv tashlagich.

The composition of hydrotechnical structures of the South Surkhan reservoir consists of the following:

- Reservoir basin;
- Dam;
- Destructive water discharge facility;
- Right bank water release facility;
- Protection dam.

The results of field observations on the operational condition of structures in the South Surkhan reservoir:

- The condition of the upper part of the dam is unsatisfactory.



Picture-1.

- Reinforcement of cracks between concrete with tar has not been done for

several years.

- No work was carried out to determine the voids under the concrete in the pressure slope.
- Cleaning works were not carried out on the non-pressurized slope of the dam.
- There are no gauges for determining the water level in the reservoir, information about the available water volume in the reservoir is provided to higher organizations in an approximate manner.

Water outlet:

- The gates of the water outlet facility have not been opened since 1996.
- The reducer of the lifting mechanism of the working left-hand shutter No.1 is faulty and unusable.
- Emergency repair gate No. 2 is defective, electric motor is unusable, not repaired.
- Mechanisms for raising and lowering all shutters in the building are severely corroded.



Picture-2

- Sensors indicating the opening and closing of the shutters are useless.
- The diesel power plant in the facility is faulty.
- Seepage water is constantly dripping from the walls of the building.
- No injection work has been done since the construction period.
- Emergency repair shutters have not been tested for several years, there are no official documents.

Emergency drainage facility:

- Some of the concrete slabs in the structure have moved, repair and restoration works have not been completed.
- The facility has not been cleaned.

Piezometers:

- Out of 11 piezometers installed in the dam, 7 are working, 4 are defective.
- The data obtained from the pressure gauges were not recorded, they were written on different papers.
- The sensitivity of piezometers was last determined in 2002.
- Existing control and measuring devices (NUA) at the dam:
- At the dam, there is a load of reports of control measuring devices (benchmark, mark), none of them have serial numbers.

Measures to increase the reliability of hydrotechnical structures in the South-Surkhan reservoir

To improve the technical condition of the water reservoir and increase its reliability, the following is recommended:

- repair of reinforced concrete covers on the pressure slope of the dam;
- to identify the voids under the concrete in pressure mortar, to fill them and to strengthen the cracks with mastic;
- cleaning the non-pressurized slope of the dam;
- installation of rails showing the water level in the reservoir basin and tying them to the rafter;
- cleaning and anti-corrosion painting of all shutter lifting and lowering mechanisms in the facility;
- repair of sensors in shutters; replacement of electrical cables in the facility with new ones;
- switching the lighting system to 36 volts due to the high voltage in the shutter section of the working tunnel;
- to repair the diesel power plant in the facility and ensure that it is in constant

working condition;

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