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GIDROELEKTROSTANSIYALAR DERIVATSIYA KANALINI EKSPLUTATSIYA SHAROITINI YAXSHILASH

Ziyodullayev O'ktam – stajyor o'qituvchi

Inomov Dilmurod Islom o'g'li stajyor o'qituvchi

"Toshkent irrigatsiya va qishloq xo'jaligini mexanizatsiyalash muhandislari instituti" Milliy tadqiqot universiteti Buxoro tabiiy resurslarini boshqarish instituti

Annotatsiya: O'zbekiston Respublikasi Prezidenti Shavkat Mirziyoyevning "2017-2021 yillarda "Gidroenergetikani yanada rivojlantirish dasturi to'g'risida" gi qarori. 1-GES O'zbekistonda qurilgan eng birinchi GES dir. 1926-yilda ishga tushgan 1-GES o'sha vaqtda har biri 1 mgrtlik 4 ta agregat o'rnatilgan. GES lar sxemasi derivatsion suv o'tkazgichlar bosh va stansion bo'g'inlar orasidagi bog'lovchi asosiy tarkibiy qism sanaladi.

Kalit so'zlar: derivatsion kanal,beton qoplamali GES, o'zi boshqariladigan va o'zi boshqarilmaydigan kanallar, himoyalovchi qoplamalar, suv o'tkazgichlar.

IMPROVEMENT OF THE OPERATING CONDITIONS OF THE HYDROELECTRIC PLANT DERIVATION CHANNEL

Ziyodullaev Uktam,- Trainee-teacher of the department "Hydraulic structures and pumping stations" of Bukhara Institute of Natural Resources Management

Inomov Dilmurod Islom ugli,- Trainee-teacher of the department "Hydraulic structures and pumping stations" of Bukhara Institute of Natural Resources Management

Bukhara Institute of Natural Resources Management of the National Research University of "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers"

Annotation. Decision of the President of the Republic of Uzbekistan Shavkat Mirziyoyev "On the program for the further development of hydropower in 2017-2021". The 1st HPP is the first HPP built in Uzbekistan. In 1926, the 1st HPP was put into operation, at that time 4 aggregates of 1 megawatt each were installed. The

scheme of hydroelectric power plants is considered the main component of the connection between the main and station joints of derivation water conduits.

Keywords: Derivation channel, hydroelectric power station with concrete cover, self-controlled and non-self-controlled channels, protective coatings, water conduits.

Toshkent geslar kaskadiga kiruvchi 1-Ges O'zbekistonda qurilgan eng birinchi ges dir 1926-yilda ishga tushgan 1- ges o'sha vaqtda har biri 1 mgrtlik 4 ta agregat o'rnatilgan.

Derivatsiya GES da Derivatsiya suv o'tkazgichlar yordamida bir yerda to'plangan bosimni xosil qilinishi taminlanadi .

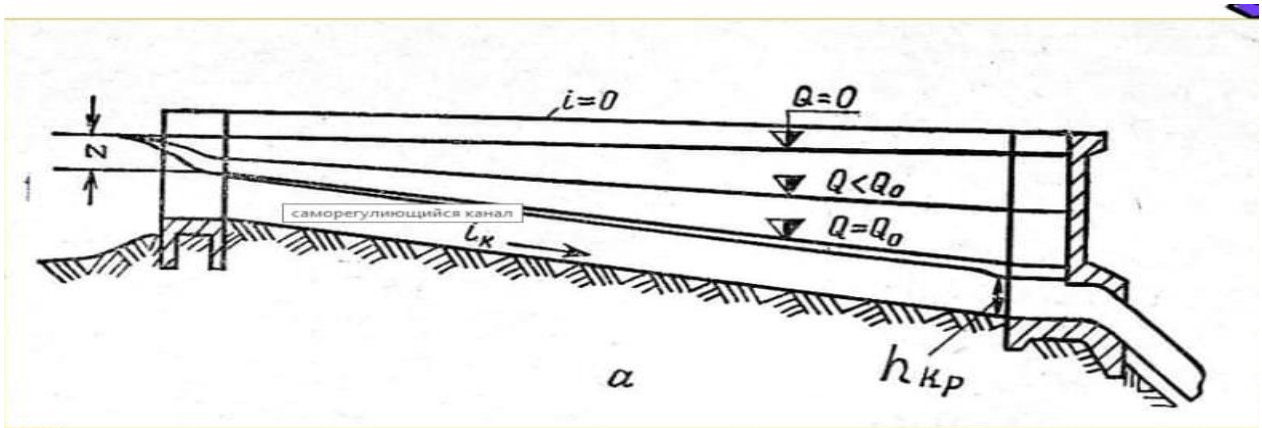
GES lar sxemasi derivatsion suv o'tkazgichlar bosh va stansion bo'g'inlar orasidagi bog'lovchi asosiy tarkibiy qism sanaladi.

Derivasion suv o'tkazg'ichlarning barchasidan ochiq kanallar ancha soda konstruksiyaga ega bo'ib ular keng tarqalgan sanaladi.

Bajarilish vazifalariga ko'ra ular o'zi oqar sug'orish tizimlarning magistral kanallarga o'xshash bo'ladi. Ishlashning gidravlik sharoitlari bo'yicha derivatsion kanallar ikki turga bo'linadi.

a O'zi boshqariladigan.

b O'zi boshqarilmaydigan.



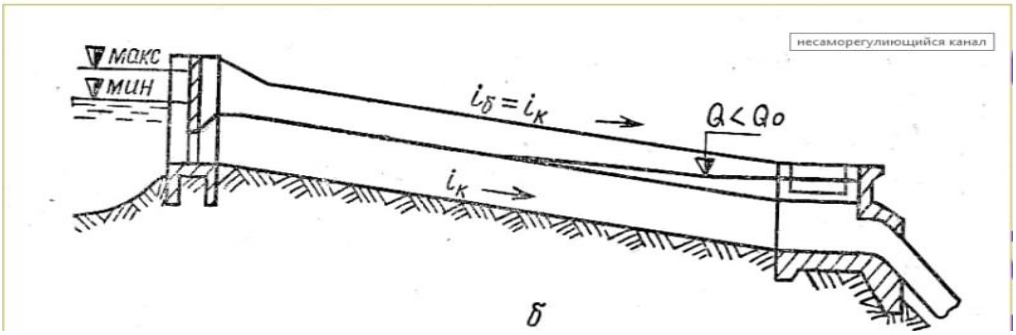
1-rasm. O'zi boshqariladigan kanallar.

Suv sathining o'zgarishi GES suv sarfining hisobiy suv sarfiga nisbatan yoki ko'payishi yoki kamayishi natijasida kuzatiladi. O'zi boshqariladigan kanallar $Q_K=Q_{GES}=0$ xolatlarda kanaldagi suvning sathi yuqori biefdagi suv sathining

otmetkasi darajasida shakllanadi. Shu sababli o’zi boshqariladigan kanalning dambalari gorizontal ko’rinishda bajariladi. GES ning suv sahtlari uzluksiz o’zgarib turganda o’zi boshqariladigan kanalning gidravlik rejimi nostasionar bo’ladi, chunki oqimning gidravlik elementlari (chuqurlik tezlik sarf) vaqt davomida kesimni o’zida hamda kanalning butun uzunligida o’zgarib turadi.[3]

Asosiy afzalliklari va kamchiliklar: o’zi boshqariladigan kanalning asosiy afzalliklari suv sarfini o’zi o’zi bilan boshqarilishi sanaladi va shu sababli bosimli xovuzda suv tashlash inshooti kerak bo’lmaydi. Shu sababli o’zi boshqariladigan kanallar kichik uzunlikda bajariladi.

O’zi boshqarilmaydigan kanallar: Ularning umumiy uzunligida suv sirtining nishabligi tub va bermalar nishabliklariga teng bo’ladi. Shu sababli GES lardagi yuklamaning o’zgarishlariga qaramasdan, bunday kanallar barqaror rejimda ishlaydi. Yuklama grafikning keskin kamayishi xolatlaridagi soatlarda kanaldagi optiqcha suv bosimli xovuzdagi joylashgan suv tashlagich inshooti opqali pastki biefga o’tkaziladi yani kanaldagi suvning sarfi Q_K suv tashlash inshooti suv sarfi Q_T va GES suv sarflari Q_{GES} summasiga teng bo’ladi.[4]



2-rasm. O’zi boshqarilmaydigan kanallar.

Kompleks vazifalarni bajarish uchun (energetika va sug’orish) mo’ljallangan derivatsiya kanallar ko’pincha o’zi boshqarilmaydigan kanallar kabi loyihalanadi. Kanalning aynan shu turi sug’orish tizimlardagi tabiiy balandliklar mavjud bo’lgan joylardagi gidroelektrostansiyalarning qurilishida to’g’ri keladi.

Asosiy ijobiy taraflarning konstruksiyasining soddaligi va ularning chegaralanmagan uzunligi sababli. Shu sababli ular o’zi boshqarilmaydigan

kanallarga nisbatan ancha arzon sanaladi lekin shu bilan birgalikda shu kanallarda barqaror rejimni o'rnatilishini talab qiladi va o'z navbatida ushbu holatni statsion bo'g'in inshootlarining qimmatlashiga olib keladi. Suv harakatining barqaror rejimi cho'kindilar va muzlar hosil bo'lishiga qarshi sharoitlarni taminlab beradi.

Bunday rejimda cho'kindilar asosan bosimli hovuzda o'tiradi va bu yerda ularni suv tashlagichning tezoqarlar orqali yuvib tashlash uchun mo'ljallangan maxsus qurilmalar o'rnatilgan.

Ximoyalovchi qoplamalarni ishlatilishi filtratsiya darajasini kamaytirish kanal tubi va otkoslarni yuvilish va loyqa to'planishidan himoyalash suv o'simliklari bilan o't bosishni oldini olish maqsadida amalga oshiriladi.

Barcha bu hodisalar kanaldan foydalanishni qiyinlashtiradi, o'tayotgan suv sarfi va bosimni kamayishiga olib keladi va oqibatda ishlab beriladigan elektroenergiya miqdorini kamayishiga olib keladi. Amaliyotda monolit va yig'ma beton va temirbeton asfaltbeton shag'al-toshqotirma qoplamalar va tosh-tashlama qoplamalar ishlatiladi.

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