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The Velosty of Flow on the Unevenness of the Head and Taking into Account the Pulsation Component of Pressure, The Depth of the Spillway Inlet

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Annotation: The velocity of flow on the unevenness of the head and taking into account the pulsation component of pressure, the depth of the spillway inlet. The study of when choosing the outlines of the heads, they strive to comply with the following conditions, the resistance coefficient of the input section is the smallest, the dimensions of the heads and confuser of the inlet section are minimal, outlines - the simplest, absence of cavitation on the tips.

Keywords: springboards, dispers, multiphase fluid, spillway, pulsation component, multiphase fluid, cavitation, boiling, barometric pressure.

Introduction.

The pressure drop coefficient at the tip determines, in fractions k of the velocity pressure behind the tip, the pressure drop at the tip point i, caused by the conversion of the potential energy of the flow into kinetic energy and the influence of accelerations developing when the flow turns. As the inlet hole deepens, the load on the valves and the power of the lifting mechanisms increase, the process of closing the holes becomes more complicated, since forced seating of the valves may be required, and inspection and repair of embedded parts becomes more difficult. As well as the initial period for skipping construction costs, the altitude position of the holes is determined by the given regime of water levels in the upper pool [1]. It is taken into account that when the depth is reduced to certain limits, there is a danger of air being trapped in the hole due to the formation of vortex funnels in front of the water intake.

Methods.

If we assume that the flow around the tip is potential, then the speed at the point i of the tip $\overline{C}_p$, for which the value is known, is determined from the condition of constant energy for any streamline. For the streamline near the surface of the head we have

$$t_i = \frac{u_i^2}{2g} + \frac{p_i}{\rho g} \qquad (1)$$

taking into account (4), we obtain [2]:

$$\frac{u_i^2}{2g} = \overline{C}_p \frac{\vartheta_k^2}{2g} \frac{u_i^2}{\vartheta_k^2} = \overline{C}_p$$

therefore, the local averaged velocity at the point where the maximum pressure drop occurs is [3]:

$$u_i = \vartheta_k \sqrt{\overline{C}_{pмакс}} \qquad (2)$$

By introducing this speed into formula when calculating the minimum pressure on the tip, the pressure drop due to the influence of irregularities is obviously exaggerated, since in reality the speed at the surface of the tip decreases due to friction forces.

The pressure pulsation coefficient at the tip is determined from the graph in Fig. 1. [4].

The value δ determines the root-mean-square value of the pulsation component of pressure. When calculating in one should introduce $3\delta\frac{\vartheta_k^2}{2g}$, and even that is $4\delta\frac{\vartheta_k^2}{2g}$, deviate from the "three sigma" rule.It should be noted that the values δ obtained in pre-cavitation modes [5].

When cavitation occurs, the nature of the pressure pulsation becomes different, since the pulsating pressure does not fall below the critical pressure. Deepening the spillway inlet. The smaller the depth of the inlet hole, the easier it is to solve the issue of equipping the holes with gates and their operation [6].

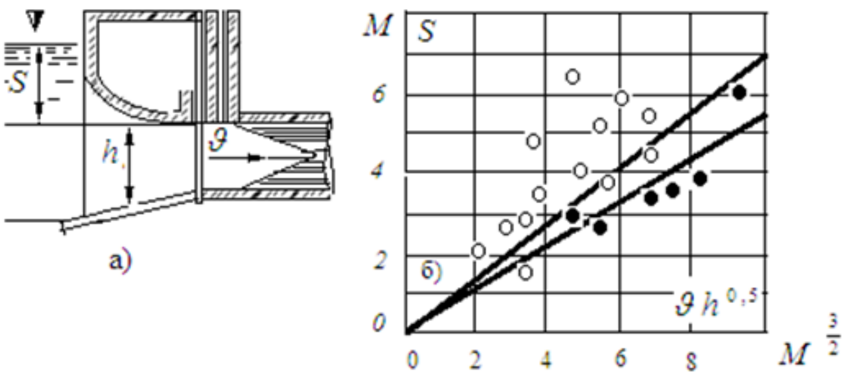

Fig.1.To determine the depth of the water inlet hole

Based on the results of observations of funnel formation at water intakes of approximately the same shape in Canadian waterworks (Fig. 1, a), empirical formulas were obtained to determine the minimum depth of the hole S, at which there are no vortex funnels that draw air into the hole [7].

With a frontal symmetrical water supply, depth in meters:

$$S = 0{,}52\vartheta h^{0,5} \qquad (3)$$

when supplying water with a slanted flow in plan:

$$S = 0{,}7\vartheta h^{0,5} \qquad (4)$$

As the inlet hole deepens, the load on the valves and the power of the lifting mechanisms increase, the process of closing the holes becomes more complicated, since forced seating of the valves may be required, and inspection and repair of embedded parts becomes more difficult. Since spillways can serve not only to pass water and floods and release the reservoir in order to cut off the peak of the flood, but also for irrigation releases [8].

Thus, the elevation of the upper edge of the inlet holes is determined by the necessary deepening of the holes under the level of the upstream water due to the condition of no air entrapment.There are very numerous works devoted to the calculation of funnel formation and the entrainment of floating bodies in buried holes, referring to the outflow from the hole in the bottom of the vessel or the free outflow from under the shutter, due to It is not possible to use the recommendations contained in these works to calculate the depth of holes in water intakes.

Conclusions:

The smaller the depth of the inlet hole, the easier it is to solve the issue of equipping the holes with gates and their operation. As the inlet hole deepens, the load on the valves and the power of the lifting mechanisms increase, the process of closing the holes becomes more complicated, since forced seating of the valves may be required, and inspection and repair of embedded parts becomes more difficult. Since spillways can serve not only to pass water and floods and release the reservoir in order to cut off the peak of the flood, but also for irrigation releases. As well as the initial period for skipping construction costs, the altitude position of the holes is determined by the given regime of water levels in the upper pool. It is taken into account that when the depth is reduced to certain limits, there is a danger of air being trapped in the hole due to the formation of vortex funnels in front of the water intake.

References

1. Mo'minov, O. A., Abdukarimov, B. A., & O'tbosarov, S. R. (2021). Improving support for the process of the thermal convection process by installing reflective panels in existing radiators in places and theoretical analysis. In *Наука и инновации в строительстве* (pp. 47-50).
2. Абдукаримов, Б. А., Муминов, О. А., & Утбосаров, Ш. Р. (2020). Оптимизация рабочих параметров плоского солнечного воздушного обогревателя. In *Приоритетные направления инновационной деятельности в промышленности* (pp. 8-11).
3. Mo'minov, O. A., & O'tbosarov Sh, R. Type of heating radiators, principles of operation and theoretical analysis of their technical and economic characteristics. *JournalNX*, *7*(05), 299-303.
4. Muminov, O., & Maksudov, R. (2022). HIDROTECHNICS PREVENT VIBRATIONS THAT OCCUR IN CONSTRUCTIONS. *Science and innovation*, *1*(A7), 762-766.
5. Muminov, O. (2022). TYPES OF CAVITATION, CAUSING VIBRATION IN ENGINEERING AND WATER SUPPLY SYSTEMS. *Science and innovation*, *1*(A7), 732-737.
6. Abdullayev, B. X., & Rahmankulov, S. A. (2021). Modeling Aeration in High Pressure Hydraulic Circulation. *Central Asian Journal of Theoretical and Applied Science*, *2*(12), 127-136.
7. Madaliev, M. E. U., Rakhmankulov, S. A., & Tursunaliev, M. M. U. (2021). Comparison of Finite-Difference Schemes for the Burgers Problem. *Middle European Scientific Bulletin*, *18*, 76-83.
8. Abdullayev, B. X., & Rahmankulov, S. A. (2021). Movement of Variable Flow Flux Along the Path in a Closed Inclined Pipeline. *Central Asian Journal of Theoretical and Applied Science*, *2*(12), 120-126..
9. Rakhmankulov, A. (2022). ГИДРАВЛИЧЕСКИЕ ПАРАМЕТРЫ ПОТОКА ВОДЫ В БОРОДЕ С НЕСТАЦИОНАРНЫМ ДНОМ. *Science and innovation*, *1*(A7), 820-826.

10. Rakhmankulov, A. (2022). ГИДРАВЛИЧЕСКИЕ ПАРАМЕТРЫ ПОТОКА ВОДЫ В БОРОДЕ С НЕСТАЦИОНАРНЫМ ДНОМ. *Science and innovation*, *1*(A7), 820-826.
11. Solijonov, MV (2022). QUYOSH ENERGİYAsidan FOYDALANGAN YANGI QOYISH HAVO ISITISH PARAMETRLARINI ISHLAB CHIQISH PARAMETRLARINI OPTİMLAYTIRISh. *MATEMATİK NAZARIYA VA INFORMATYA FANLARI MARKAZIY ASIAN JURNALI* , *3* (12), 190-197.
12. Abdukarimov, BA, Solijonov, MV, & Abdumalikov, RR (2023). AN'VANSIY VA QAYTA OLiladigan ENERGIYA MANBALARI ASOSIDA ISHLAB CHIQISH ISILIK TA'MINLANISH TIZIMLARINI TADQIQOT. *OLTIN MIYA* , *1* (1), 253-255.
13. Abdukarimov, A., Solijonov, M., & Abduxamidov, A. (2022). QUYOSH ENERGIYASIDAN FOYDALANISHDA YANGI SOLAR HAVO ISITISHLARNING ISHLATILISH PARAMETRLARINI OPTİMLAYTIRISh. *Fan va innovatsiyalar* , *1* (A8), 815-823.
14. Umurzakova, M. A., Usmanov, M. A., & Rakhimov, M. N. (2021). ANALOGY REYNOLDS PRI TECHENIYAX AND DIFFUZORNO-CONFUZORNYX KANALAX. *Economics and society* , (3-2 (82)), 479-486.
15. Abbasov, Y., & Usmanov, M. (2022). CALCULATION OF THEIR POWER AND HEATING SURFACE IN IMPROVING THE EFFICIENCY OF AIR HEATING SYSTEMS. *Science and innovation* , *1* (A7), 738-743.
16. Abbasov, YS, Abdukarimov, BA, & Ugli Usmanov, MA (2022). Optimization of Working Parameters of Colorifiers used in Heat Supply Systems. *Central Asian Journal of Theoretical and Applied Science* , *3* (6), 399-406.
17. Maksudov, RI, Dehkanov, SS, & Usmanov, MA (2023). THERMAL INSULATION MATERIALS AND DETERMINATION OF THEIR OPTIMAL THICKNESS. *Economics and society* , (4-1 (107)), 151-157.
18. Abbasov , Y. _ S. , & ugli Usmanov , M. _ A. _ (2022). Design of an Effective Heating System for Residential and Public Buildings. *Central Asian Journal of Theoretical and Applied Science* , *3* (5), 341-346 .
19. Madaliyev , E. , Makhsitalayev , B. , & Rustamova , K. (2022). IMPROVEMENT OF SEWAGE FLATS. *Science and innovation* , *1* (A7), 796-801.
20. Madaliyev, E., & Maksitaliyev , B. (2022). A NEW WAY OF GETTING ELECTRICITY. *Science oath innovation* , *1* (A7), 790-795.
21. Abdukarimov, B.A., Tillaboyeva F. Sh, va A.T.A'zamjonov. «QUYOSH SUV ISITISH KOLLEKTOR ISILIK QUVURLARIDAGI GIDRAVLIK JARAYONLARNI HISOBLASH». *Ekonomi va sotsium* 4-1 (107) (2023): 4-10.
22. qizi Tillaboyeva, F. S. (2023). QUYOSHLI SUV ISITGICH KOLLEKTORLARINING ISSIQLIK ALMASHINUVI HISOBI. GOLDEN BRAIN, 1(31), 156-162.
23. qizi Tillaboyeva, F. S. (2022). QUYOSH KOLLEKTORLARI. QUYOSH KOLLEKTORLARINING TURLARI VA KOMPONENTLARI. *INTERNATIONAL CONFERENCE ON LEARNING AND TEACHING*, *1*(6), 255-258.
24. Abdulkhaev, Z., Abdujalilova, S., & Abumalikov, R. (2023). CONTROL OF HEAT TRANSFER ABILITY OF RADIATORS USING THERMOVALVE. *Journal of Construction and Engineering Technology*, *1*(1).

25. Erkinjonovich, A. Z., Abdujalilova, S. S., Aminjonovna, A. I., Abdulazizovna, M. N., & Botyrjonovna, Y. A. (2023). Fire Prevention Using an Automatic Shut-of Valve. *CENTRAL ASIAN JOURNAL OF MATHEMATICAL THEORY AND COMPUTER SCIENCES*, *4*(8), 91-94.
26. Abdujalilova, S. S., & Zukhridinovna, R. S. (2023). MEASURING WATER CONSUMPTION IN FITTINGS. *CENTRAL ASIAN JOURNAL OF MATHEMATICAL THEORY AND COMPUTER SCIENCES*, *4*(5), 29-3
27. Ибрагимова, З. К. К., Хамдамова, Н. С. К., Умуркулов, Ш. Х. У., & Сабиров, Д. Р. У. (2022). Подготовка питьевой воды из маломощных поверхностных водоисточников. Central Asian Research Journal for Interdisciplinary Studies (CARJIS), 2(Special Issue 4), 77-83.
28. OBIDOV J., UMURQULOV S. O ‘ZBEKISTON YASHIL IQTISODIYOT SOHASIDA ISLOHOTLARNI AMALGA OSHIRISHDA MUQOBIL ENERGIYA MANBALARINING O ‘RNI VA AHAMIYATI //Bulletin of Contemporary Studies. – 2023. – Т. 1. – №. 3. – С. 15-18.
29. Bekzod, A. (2020). Relevance of use of solar energy and optimization of operating parameters of new solar heaters for effective use of solar energy. *IJAR*, *6*(6), 16-20.
30. Mo'minov, O. A., Abdukarimov, B. A., & O'tbosarov, S. R. (2021). Improving support for the process of the thermal convection process by installing reflective panels in existing radiators in places and theoretical analysis. In *Наука и инновации в строительстве* (pp. 47-50).
31. Abdukarimov, B., O'tbosarov, S., & Abdurazakov, A. (2021). Investigation of the use of new solar air heaters for drying agricultural products. In *E3S Web of Conferences* (Vol. 264). EDP Sciences.
32. Abdukarimov, B. A., O’tbosarov, S. R., & Tursunaliyev, M. M. (2014). Increasing Performance Efficiency by Investigating the Surface of the Solar Air Heater Collector. *NM Safarov and A. Alinazarov. Use of environmentally friendly energy sources*.
33. Худайкулов, С. И., Жовлиев, У. Т., Сайлиев, О. И., & Утбосаров, Ш. Р. (2022). МОДЕЛИРОВАНИЯ ЗАДАЧИ ТУРБУЛЕНТНОГО ТЕЧЕНИЯ СМЕСИ ВЯЗКИХ ЖИДКОСТЕЙ. *BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI*, *2*(1), 405-410.
34. Эгамбердиев, О. Ш., Хамдамов, А., Ўзбеков, Ж., Рахмонқулова, С., & Халилов, Н. (2022). НАСОС СТАНЦИЯСИНИНГ ИШЛАШ ЖАРАЁНИНИ ОПТИМАЛ БОШҚАРИШ АЛГОРИТМИ. *Евразийский журнал академических исследований*, *2*(11), 94-99.
35. Nurmuhammad, X. (2022). HYDRAULIC IMPACT IN HYDRO SYSTEMS AND ITS CAUSES. *CENTRAL ASIAN JOURNAL OF MATHEMATICAL THEORY AND COMPUTER SCIENCES*, *3*(12), 159-164.
36. Ishankulovich, K. S., & Akramovna, U. N. (2021). Simulation of the Lift of Two Sequential Gate Valves of the Karkidon Reservoir. *Middle European Scientific Bulletin*, *18*, 148-156.
37. Ishankulovich, K. S. (2022). Modeling The Rotation Of A Turbulent Flow With A Variable Radius. *International Journal of Progressive Sciences and Technologies*, *31*(2), 388-395.
38. O‘tbosarov, S. H., & Xusanov, N. (2022). ASSEMBLY OF STRUCTURES AND WATER DIVIDERS. *Science and innovation*, *1*(A7), 780-784.

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39. Mo’minov, O. A., & O’tbosarov Sh, R. Type of heating radiators, principles of operation and theoretical analysis of their technical and economic characteristics. *JournalNX*, *7*(05), 299-303.