

The comparison of the losses under throttle and 3-step-like frequency management for pump D 630-90:

	Consumption Q , m ³ /s				
	0,111	0,139	0,153	0,167	0,181
Losses under throttle, kW	28,6	31,25	36,42	39,4	47,4
Losses under 3-h step-like frequency management, kW	14,28	17,5	26,8	-	-
Difference of the losses, kW	14,32	13,75	9,62	-	-
Annual economic effect, uah	58 000	55 687	38 961	-	-

Reference

1. Канюк Г.И., Мезеря А.Ю., Фокина А.Р., Лаптинова Е.В., Лаптинов И.П. Энергосберегающее управление и повышение технико-экономической эффективности насосных установок тепловых и атомных электростанций/ Східно-Європейський журнал передових технологій. –Харків: –2012. –№. 3/8 (57). – С.58-62.

2. Канюк Г.И., Мезеря А.Ю., Михайский Д.В., Лаптинов И.П., Фокина А.Р. Резервы энергосберегающего управления технологическими процессами на действующих ТЭС и АЭС. –Харьков: Изд-во «Точка», 2012. – 184с. Русс. яз.

3. Канюк Г.И., Артюх С.Ф., Мезеря А.Ю., Лаптинова Е.В., Мельников В.Е. Научные принципы энергосбережения в тепловой и атомной энергетике. –Харьков: Изд-во «Точка», 2013. –140 с. Русс. яз.

4. Канюк Г.И., Мезеря А.Ю., Лаптинов И.П. Модель энергосберегающего управления нагнетательными установками тепловых электростанций. Вісник НТУ «ХПІ»: Енергетичні та теплотехнічні процеси й устаткування. №12(1055), 2014. – С.90-97.

THE IMPROVEMENT OF THE TECHNICAL-ECONOMIC FEATURES TO USAGES BODY CYLINDER OF THE HIGH PRESSURE OF THE STEAM TURBINES IN ACTIVATE AND VARYING DUTY

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Increasing to technical efficiency element existing steam turbines power station - one of the actual problems of modern energy of the Ukraine.

The serviceability and longevity turbine hang from realization mode starting and stops. The last at detour from technological rates activate operation, mode of the set of the loading bring about row emergency consequence as urgent, so and subsequently, at time. This appearance of the rifts in body of the turbines, valve and vapourwire, sagging rotor and cylinder of the turbines, warping flange horizontal connector, weakening of the landing join, change the structured condition of the metal, increased wear-out bearing, as well as row other trouble that is conditioned mistake when performing activate operation.

For steam turbines, working at over critical and high parameter, at usages them in activate mode, mode of the variable loads for the reason ensuring the requirements to technical-economic feature - an economy, maneuverability,

reliability, transportability, long length, extensions of the period to usages, necessary using the perspective methods of management their heat condition, forecasting and maintenance to density of the horizontal opening external, internal body cylinder.

The perspective method of management heat condition body cylinder steam turbines is an using the method inverse form to warm-up unevenness (ZFTN) connected body cylinder, since is herewith reached accounting economy of the running part of turbine, maneuverability, reliability, activate transportability on row of the nodes of the turbine.

For ensuring the using ZFTN at condition of the development of the program ZFTN for starting the turbine from different heat conditions known ways shaping to inverse warm-up unevenness internal connector body of the cylinder of the high pressure of the steam turbine by regulations warm-up swing between degree, tangential voltages between degree, the temperature.

To reach greatly possible coefficient of efficiency CVD steam turbine in said mode necessary simultaneously [1] adjust the warm-up swing between degree, tangential voltages between degree, warm-up tangential voltages between degree on program of the adjustment of the condition of the body of the cylinder of the high pressure of the steam turbine.

Reference

1. Спосіб формування оберненої температурної нерівномірності внутрішніх роз'ємних корпусів циліндра високого тиску парової турбіни: [Текст]: патент 146171 Україна, МПК F01D 19/02 , F01D 1/00 / М. М. Нечуйвітер – № и 2020 06207; заявл. 25.09.2020; опубл. 20.01.2021, Бюл. № 3. – 4 с.

STUDY AND CALCULATION CAPACITOR MIXED TYPE

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Graph-analytic method of the calculation head-hydraulic and aerodynamic features "dry" water-tower is stated in work. This method allows to optimize the fe

atures of the trumpet bunch and row of the features extraction to towers, define the most efficient type, arrangement and material heat-exchange element. The results of the calculation equitable only under vertical location cooling pillars determined type-size in relatively narrow interval of the temperature and consupcion heat-carrier. In base of the mathematical model "dry" water-tower with natural pulling prescribed system accounting equations of the change parameter heat-carrier, as well as equations relationship with external complex object. Herewith following conditions and admissions are accepted:

- a current of the air in extraction tower univariate, settle and described law gas speakers for nonviscous of the liquids;
- a change the pressure of the air law hydrostatics will comply with on height;
- is allowed differring design and location heat-exchange surfaces in extraction tower.

The accounting temperature medicine to be taken externally air defines length of the period, during which actual temperature cooled circulation water exceeds accounting. At choice of the accounting temperature medicine to be taken externally air was taken into account change the temperature circulation water at the input and leaving the