

In operation pump in consequence of pressure of water on uneven on area to lateral surfaces worker travell about appears the axial effort, which tries to displace the rotor of the pump aside suction. For justification axial force in pump is provided discharge device, consisting of disk of the unload, ring and bushings of the unload and remote bushing.

The model - material or mentally presented object, substituting in process of the study object-original, saved significant for given studies of typical its line. The main advantage of the models is a possibility to experiment the way light interference in purpose of the change (variation) relatively limited numbers input variable and quick reception source result. The process of the building to models is identified modeling. Other word, modeling - a process of the study of the construction and characteristic of the original by means of models [2].

Two principles use for building of the models: deductive (from the general to concrete) and inductive (from share to the general). Under the first approach is considered private event to well-known fundamental model, which adapts to condition of the prototyped object with provision for concrete circumstance. The second way expects goine hypothesises, decomposition of the complex object, analysis, then syntheses. It here is broadly used resemblance, searching for analogy, conclusion for the reason shaping of any regularities by means of suggestions about behaviour of the system.

As a result done work have got the simplified model mathematical calculation that vastly shortens the expenseses of time for done work. By means of electronic modeling we have got the more exact calculations, as well as reporting in the manner of graph, on which immediately possible define the place to designs, where will pass most and least load of power and do the findings about designs given device.

On report inventor has got the small difference in load on full tilt between forms by calculation and calculation in generator component gross that once again confirms the field exact accounting actions program. She takes into account all that required for accuracy of the output ready, correct answer. In report possible to notice that is specified the most necessary got importances.

### **Reference**

1. Колпаков Л.Г. Центробежные насосы магистральных нефтепроводов. – М.: Недра, 1985. – 184с.
2. Чигарев А.В., Кравчук А.С., Смалюк А.Ф. Ansys для инженеров: Справ. пособие. – М.: Машиностроение, 2004. – 512с.
3. Горшков А. М. Насосы. – М.: Госэнергоиздат, 1947, 188 с.

## **NORMATIVE METHODS MEASUREMENT ENERGY LOSSES IN ELEMENT CAPACITOR TURBINE INSTALLATION**

Mezerya Andrey, Bikova Tatiana

Ukrainian engineering-pedagogical academy

Given work is dedicated to problem to modernizations energy-block, as follows consideration reduction strategy of the energy expenseses in element capacitor turbine installation.

The more essential influence upon factors of efficiency TES render the low-potention complexes, as follows their main element - a capacitor. Change state of working energy-block and quality cooling water bring about intensive soiling the surfaces headchange capacitor, in that time contamination capacitor brings about:

- a reduction to powers energy-block (the underproduction to electric powers);
- an increase the working expenses; the deterioration to economy energy-block;
- when increase the pressure on 1kPa power of the turbine in kondensation mode decreases on 0,8-0,9%, or so grows the specific consumption a fuel.

Simultaneously with this, maintenance of the purity capacitor requires the additional expenses, brings about nonproduction of the electric powers at period of the cleaning. In this connection appears the problem to optimization mode cleaning capacitor.

In base of the mathematical model of the determination of the optimum periods of the cleaning the surfaces capacitor is accepted methods, advanced author by account and analysis perennial statistical condition data to usages element low-potention complex energy-block Zmievskey TES, Zuevskey TES, Zaporozhskoy AES.

The difference of the proposed methods of the determination of the optimum periods peelings from existing is concluded in following: instead of independent optimization of each interval between cleaning is offered optimization for a certain typical time lag  $T$ . For time is chosen overhaul period. In this case optimum location is realized on time axis of the moments of the unhooking the capacitor on clear:

$$(k + 1) \cdot \tau_{optc} + k\Delta\tau = T,$$

where  $k$  - an amount of the unhooking the capacitor on cleaning for overhaul period;

$T$  - an overhaul period of the block, hour;

$\Delta\tau$  - duration of the cleaning the capacitor, hour;  $\tau_{optc}$  - an optimum interval between two cleanings, hour.

In given methods is taken into account time for cleaning the capacitor  $\Delta\tau$  that contributes it is enough essential adjustment and raises the quality of the planning period cleaning.

Using standard programme methods of searching for of the optimum of the system is defined minimum to functions  $F$  in point  $\tau_{optc}$  whereupon possible define optimum number of the cleaning the capacitor for period  $T$ .

## **URGENCY OF THE USE THE SIMPLIFIED SYSTEM TO AUTOMATIONS ON SMALL GES**

Pridvorov Sergei

Ukrainian engineering-pedagogical academy

On modern small GES (sGES), in the same way either as on GES with hydrounit of the greater powers, are installed complex systems of the autocontrol and technological automation, which check and adjust more than 20 parameters and are a high-priced equipment. Together with that, on sGES there is no need to check such amount a parameter because of simplified mode of their work.

All this leads to ungrounded increase the capital expenditures at construction GES and prime cost produced to electric powers.

Besides, at present on GES small power work basically analog systems of the autocontrol and systems of the technological automation on the base electromagnetic and electromechanic relay, reliability of the work falls due to that to stations.

Control GES small power is realized servicing personnel on shield and board of control, installed right in machine common-room station that also brings about increasing of the working expenses to stations.

For GES small power by actual problem is a most further optimization of the schemes of the automation and structures energy-block, particularly in condition of the remote control by work to stations. This allows to reduce the