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INFLUENCE OF THE TYPE OF BURNED FUEL ON TECHNICAL AND ECONOMIC INDICATORS

When several types of fuel are burned simultaneously, the optimal-standard parameters change depending on the quantitative ratio of the types of fuel burned. Such parameters are determined by the expression:

$$П_i = \sum_k \delta_k П_{ik},$$

Where δ_k – the share of the *k*-th type of fuel burned in the total consumption (average value for the analyzed period); $П_i$ and $П_{ik}$, – any indicator related respectively to the fuel mixture and its *k*-th type.

Based on the deviation of the actual values of the *i*-th parameters from the optimal-normative and design values $П_{iн}$ and $П_{ip}$ energy consumption change coefficients are determined Φ_i, in relation to primary energy consumption:

- coefficient of change in energy consumption due to the action of internal factors: $\Phi_{iфн} = k_i \Delta П_{iфн}$.
- coefficient of change in energy consumption due to the action of external factors: $\Phi_{iфп} = k_i \Delta П_{iфп}$.
- the coefficient of change in energy consumption due to imperfections of equipment: $\Phi_{inp} = k_i \Delta П_{inp}$.

In these expressions the coefficients k_i represent changes in the power or heat consumption of the unit, which are caused by the deviation of the *i*-th parameters per unit at unit consumption of electrical power or heat consumption. The quantities k_i are a function of loads, equipment conditions and thermal circuits, etc. Their numerical determination is based on thermal calculations of individual elements of power equipment with continuously changing parameters characterizing the processes occurring in these elements (temperatures, pressures, flow rates, etc.), and in general is the subject of an independent study.

The totality of changes in fuel consumption caused by deviations of actual parameter values from their design values makes it possible to determine the total deviation in fuel consumption ΔB_{FP}. It is determined by the expression:

$$\Delta B_{FP} = \sum \Delta B_i = \sum \Delta B_{ki} + \sum \Delta B_{Ti} + \sum \Delta B_{c.ні} + \sum \Delta B_{p.z} + \sum \Delta B_e + \sum \Delta B_a + \sum \Delta B_n,$$

Where $\sum \Delta B_{ki}, \sum \Delta B_{Ti}, \sum \Delta B_{c.ні}, \sum \Delta B_{p.z}, \sum \Delta B_e, \sum \Delta B_a, \sum \Delta B_n$ – accordingly, deviations in fuel consumption due to the influence of the analyzed factors of the steam generator, turbine, mechanisms of the unit's own needs, regime and volume factors, fuel range and starts.

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