

AUTOMATIC CONTROL SYSTEM FOR THE ELECTRIC REGIMES OF FERROALLOY FURNACES (ACSER)

Is created for monitoring of ferroalloy furnaces work with the purpose of exposure and realization the ways of expenses decline of electric power, raw material, coke and electrode mass by automatic control.

Automatic performance, by delivery - control influences (lift up the electrode, pull down the electrode; decrease SSV increase, slip the electrode) and recommendations on correction of charge allow:

- eliminate subjective influences on an operative furnace control, that decreased amplitude of process self-oscillation;
- co-ordinate electrodes slipping, charge and electric regime of furnace operations in the real time;
- support optimum position of reactionary area relative to the furnace bottom;
- make a necessary temperature condition in this area, by rational distributing of electrode active power between the arc and liquid melt, at this temperature condition the reduction reactions flow with minimum power expenses;
- shut out the considerable defects of active power between electrodes, this brought to equal distributing of energy in furnace bath, to creation of single melting space, to exception of forming of false bottom.
- equally slip electrodes taking into account the features of expense and coking, that brought to in the substantial diminishing of emergencies situations connected with the electrodes state.
- unite the furnace systems of ACSER in a local network with passing information to technological services of factory.

Optimization of technological process motion during furnace operation in the automatic performance allowed getting the economy of power and financial resources: electric power -2-4 %; raw material - 2 - 6 %; electrode mass - 2 - 4 %.

On the base of ACSER RP is created the virtual teaching system is an emulator of furnace operation. Which is a trainer for teaching of personnel to the features of control of electrodes slipping and electric regime of furnace operation.

STRUCTURE CHART

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