In the preparation of most food products automatic heat control is vital.

Thermostats prevent scorching in clothes dryers. They reduce evaporation and are a safety device for oil storage tanks.

They are essential to control gelatine temperature in making photographic films. They are used to control paraffin vats in making waxed paper, milk containers, etc.

They control baking ovens, no matter how the ovens are heated. A thermostat is a necessary equipment with each automatic refrigerating machine.

CHAPTER XIII

INSULATION

By L. B. McMILLAN, Member

THE determination as to whether or not pipes and other heated surfaces should be insulated is based on the magnitude of the losses from such surfaces if they were allowed to remain bare. Fig. 67 shows the rate of bare surface losses under still air conditions in B.t.u. per square foot per degree temperature difference per hour (Curve 1, TRANS. A. S. H. & V. E., Vol. 26, p. 368) and the total losses in pounds

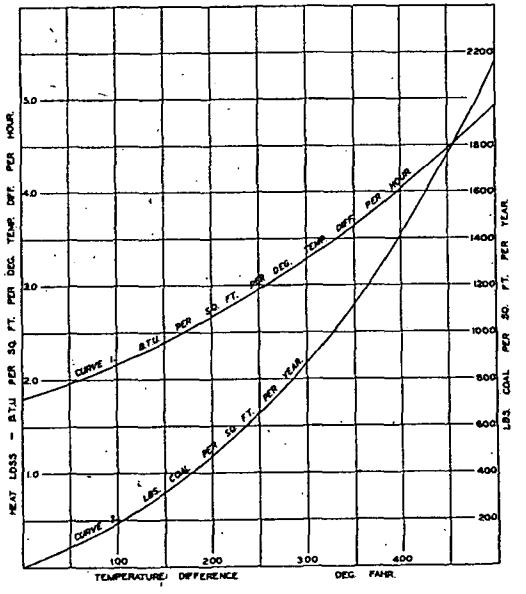

FIG. 67. HEAT LOSSES FROM BARE SURFACES

of coal per year (Curve 2). The latter is based on 10,000 B.t.u. available per pound of coal and 8760 hours per year. Where surfaces are not heated for entire year, losses for actual period of operation may readily be obtained by multiplying values taken from Curve 2 by the appropriate proportion. This also applies to the losses in dollars per year shown in Fig. 68.