
Preventing Losses in Factory Power Plants

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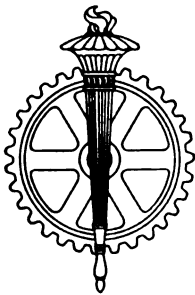
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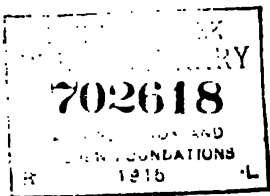
PREVENTING LOSSES
IN
FACTORY POWER PLANTS

BY
DAVID MOFFAT MYERS



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INTRODUCTION

There are usually four stages in the industrial evolution of a productive civilization such as that of the United States. The first is the frontier stage. All the men and most of the women work with their own hands. The important industries are those which have to do with the needs for food and clothes and housing. There is little surplus wealth and little spending. The hunter and the trapper is gradually being replaced by the farmer and the cattleman. The factories are small, and supply a local market: the employed class is not numerous at any one place. Each village or town is largely self-dependent. There are many mechanics in business for themselves.

The second era appears with the miner, the productive manufacturer and the development of transportation. The industries produce more than the local market can use, and more of a different kind, by reason of the aggregated labor and its economies. Supported as to food and clothes and housing, and with the highway and the railed way seeking to convey goods and raw material, an excess of wealth beyond that required to meet primary needs seeks investment and return. Greater factories arise, co-ordination of competitive interests takes place, and the era of "big business," of extending railways, of good highways, of luxury, leisure, of culture and of art begins.

The third stage may be called the era of Refinement in Production. These are the days of better business management, of economies of administra-

tion, of lowered costs of production and of power, of hydro-electric developments, of co-operation in production, of effort to reduce the cost of living.

The fourth stage is the era of Uplift. The captains of industry see not alone that it is their duty to make the producer wealthy, and the factory efficient and economical, but also that the human element must be healthy and life worth living. These are the times of securing safety and sanitation, of a recognition of the truth that the life is more than food and the body than raiment; that the employer is his brother's keeper.

Now the book of which these few lines are an introduction belongs to the third epoch and the beginnings of the fourth. It concerns itself with the reduction of operating costs in the power-plant, and aims to apply the methods of sound science to the problems of the production of power. The Author has specialized in the field of boiler-plant economy and fuel, and writes with the authority of experience in this and related departments of research. The treatment of power-plant losses is the outcome of study of the usual ignorances of executives and superintendents. The application of the principles advocated has actually effected savings of many thousands of dollars annually. The treatment is to convince the business end of the productive process, as represented by the owner and manager. It should be convincing, as the combination of theory and practice has been experimentally worked out. The power-plant has not been as attractive a field as some others to the so-called efficiency engineer; and the Author has had the privilege of recognizing the human factor in its basal relations to success. This puts the book in its pioneer place of literature as respects the fourth epoch of industrial evolution, and the ninth chapter should receive careful study. Data and conclusions on the combustion process, fuels, testing of steam generators, and the reporting

on any investigations made are features of the later chapters.

The relations of the Author and the writer of this introduction were at first the pleasant ones of the professor of engineering and the enthusiastic student. These have continued and developed into those of the affection of the older man for the younger and interest in his successful achievements. The start of the younger in the lines of thinking that the mechanical engineer must be also a business man is the older man's contribution. The development of that idea is the younger man's achievement as this presents it.

FREDERICK REMSEN HUTTON,

Past President, American Society of Mechanical Engineers.