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Dr. CHARLES EDWARD EMERY

Cleaning coal pneumatically keeps the coal dry and uses an air blast for the separation of the light clean coal from the heavy impurities. Under the circumstances, where a gas is used as the separating medium in lieu of a liquid, the ash content cannot be reduced to as low a percentage. However, it is a case of low ash plus high moisture versus a moderately low ash and low moisture. The economic value of the coal to the steam producer may be tested in the power plant under actual conditions.

Actually the cleaning and preparation of coal is a material handling problem. Only 30 to 40 per cent of the plant cost is involved in the actual cleaning equipment and the balance of the investment represents conveying, elevating, crushing, screening, drying, and loading, together with the supporting structure.

Actual costs of cleaning vary widely, dependent on the inherent difficulty of the raw product, the market requirements and the capacity of the plant, so no costs are included.

For the operator of a utility producing steam for customers, the choice of a cleaned prepared coal should be based on a cold economic analysis expressed mainly in the cost per 1000 lbs of steam. This figure no doubt will be modified by such other factors as mill capacity, grindability, tube slagging, boiler outage, ash handling, soot and tube blowing and the corrosion of air preheaters. Cleaned sized coal will certainly yield a more uniform product and in certain cases where a boiler is nearing the limit of its steaming capacity due to grate restrictions a properly prepared coal may overcome the difficulty. All in all coal preparation can be of benefit to the producers of steam.

Charles Edward Emery*

Pioneer in District Heating

When Wallace C. Andrews, the organizer of the New York Steam Company, desired some expert technical advice on the pioneer experiments in district heating being conducted at Lockport, New York, by Birdsill Holly, he sent an eminent engineer to investigate the proposition from every angle. The man was Charles Edward Emery and his report was favorable. (See cover picture.)

He became first chief engineer, manager and trustee of the New York Steam Company in 1879. He engineered, constructed and successfully operated the various company plants for eight years. Mr. Emery, a powerful man of great endurance, in the daytime planned, hired and tested materials and at night inspected construction. On these trips he often ran into Thomas A. Edison then installing electric ducts.

There were few precedents by which to go. Mr. Emery introduced the use of mineral wool for pipe insulation. He developed the first recording steam flow meter. He design-

ed numerous pieces of equipment needed for the service. In early installations he used light weight wrought-iron tubing rather than pipe, rolling the ends into cast-iron flanges much as is done with boiler tubes. He recommended a 70 F average temperature.

Previous to his New York Steam Company engagement, Mr. Emery's career had been a brilliant one. He was an engineer on naval vessels in the civil war, had conducted steam expansion experiments for the navy and had investigated and designed steam engines. He was a judge in the Philadelphia Centennial Exposition and had received a Ph. D. degree from the University of New York.

In later life Dr. Emery was a consultant on numerous projects and an expert in many litigations. He lectured at Cornell University. He received the Witt medal from the Institute of Civil Engineers of Great Britain. He was a member of many Engineering and Scientific bodies. He died in New York in 1898.

* See The National Encyclopedia and "50 Years of New York Steam Service".