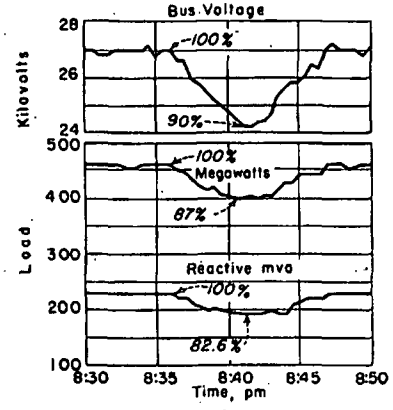
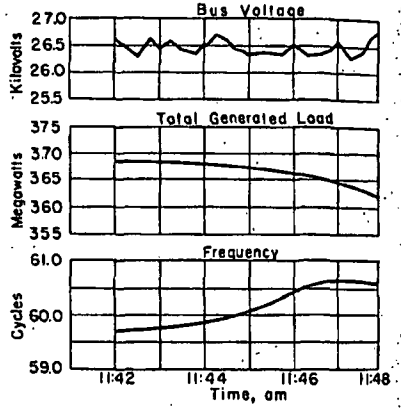
TECHNICAL BRIEFS

ENGINEERING DEVELOPMENTS HERE AND ABROAD DIGESTED FOR BUSY POWER MEN

REVIEWED IN THIS ISSUE



HOLDING FREQUENCY CONSTANT, load reduced by lowering voltage. About 68% system load was lighting and 32% power



VOLTAGE HELD CONSTANT; frequency was varied to reduce system load, estimated as 39% lighting and 61% miscellaneous

FEEDWATER

SOME PRACTICAL ASPECTS OF DEIONIZATION, *by Joseph Thompson & Francis X McGarvey, The Resinous Products & Chemical Co.* Introduction of this paper states: "In the application of ion-exchange resins to plant scale processes, it is essential that the equipment be planned and operated to utilize these materials to greatest advantage. Because of our close cooperation with engineering organizations throughout the past seven years, many individual factors have been brought to our attention which very markedly affect good unit operation and have, in some instances, pointed the way for further investigation on our part. Some of the incidents to be related hereafter are based upon facts, so elementary in nature to those devoting much of their time to the ion-exchange process, that very often difficulty is encountered by the operating engineer by failing to call such points to his attention."

Following this down-to-earth line of reasoning the authors point out the various pitfalls that can upset the performance of an ion exchanger and explain how certain factors such as backwashing, regeneration, bumping and leakage affect the over-all performance of an ion exchanger. Presented at the Engineers' Society of Western Pennsylvania Eighth Annual Water Conference, Nov 1947. *Copies available from The Resinous Products & Chemical Co, 222 W Washington Square, Philadelphia, Pa.*

STATION COSTS

EMERGENCY CONTROL OF SYSTEM LOAD, *By J M Comly and J E McCormack, The Consolidated Edison Co of New York; G B Kelley and T W Schroeder, United Light and Railway Service Co, Iowa; H W Phillips, Pennsylvania-New Jersey Interconnection, Philadelphia, Pa.* The authors' aim in this joint paper is to point out *some of the* possible effects of attempting to reduce system load by dropping frequency and voltage.

Generally speaking, reduced frequency results in slower operation of rotating equipment and consequently less work is done, diagram at right. On the other hand, a reduction in voltage generally lowers lighting intensity and cuts other resistive-type power loads, but has less effect on motor loads, diagram at left. Field tests on a particular system should be made before conclusions can be drawn.

Experience shows voltage reduction cuts reactive as well as kilowatt load, while lowering the frequency may increase reactive load at a time when reactive capacity and real power are at a limit. Use of voltage or frequency reduction should not be considered on a permanent basis but only as a means to meet unusual emergency conditions.

From tests made on the Pennsylvania-New Jersey Interconnection, it was