

Power Engineering

APRIL, 1953

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Volume 57, No. 4 Circulation of this issue 30,932

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TECHNICAL PUBLISHING COMPANY

CHICAGO, ILLINOIS



ENGINEERS PREVIEW

AN ENTIRELY NEW and highly versatile automatic machine, which will produce a perfect chemical bond between lead and steel, has been announced. In one day, one small machine will clad a steel surface normally requiring 8 to 10 man-days to cover by out-moded hand techniques, according to its originator, Knapp Mills, Inc.

With this new method, the steel is first prepared through leadizing and then lead of any desired thickness can be applied. The lead will not separate from the steel in service unless it is melted off at temperatures close to 621 F, the melting temperature of lead itself.

Such machines will chemically bond a strip of lead up to 12 in. wide by 1/4 in. thick to prepared steel. The operator can control the width and thickness of the lead cladding by regulating the speed of the machine and by spreading or narrowing the two cladding heads with which it is equipped.

* * *

WILLIAM G. CHRISTY, until recently Director of New York's Bureau of Smoke Control, has just announced that he has severed his connection with the city and opened an office as consulting engineer at 34 Park Row, New York.

Christy has had many years' experience in air pollution and smoke control work, as well as in power and heating plants. Also he has been active in the ASME for many years and is a past chairman of the fuels division.

* * *

THE TWELFTH generating plant of the Commonwealth Edison-Public Service of Northern Illinois system, to be known as the Will County generating station, will be built on a 216-acre site bordering the Chicago Sanitary and Ship Canal between Lockport and Lemont.

Preliminary excavations and sub-structure work is already well under way for the station building, crib house, water tunnels, barge docks, coal storage yards, electric switchyard and other facilities. It is expected the station will be completed and two new units in service by late 1954.

The new Will County station site is adequate for the development of a one million kilowatt power plant — more than three times the initial capacity to be installed — and the new station and its related facilities are designed to provide for additional generating units.

The property is served by the E. J. & E. Railroad which has connections with all major Chicago area trunk lines and by the Illinois Waterway, over which coal can be barged direct to the site.

NATIONAL ASSOCIATION OF CORROSION ENGINEERS held a conference during the week of March 15, 1953 at the Hotel Sherman, Chicago, Ill. Information significant to engineers concerned with protection of underground cable installations and water handling equipment in steam-electric power plants was included in the four papers given at the Electrical and Communications Symposium held Wednesday, March 18 at the Sherman Hotel, conference headquarters. For additional information contact National Association of Corrosion Engineers, 1060 M & M Building, Houston 2, Texas. A. B. Campbell, Executive Secretary.

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THE SYNCHRONOGRAPH, a repetitive surge generator that makes a simulated bolt of lightning *stand still* so its effects on electric power lines and equipment can be studied, has been developed for experimental use by engineers of the Westinghouse Electric Corporation. It will be of tremendous technical value because it will enable engineers to make almost instantly, calculations that might otherwise have taken weeks. Weighing only about 75 lb, it is conveniently portable.

The synchronograph consists of a repetitive surge generator that simulates a bolt of lightning or surge; a remote receiver that picks up the original surge; and two oscillographs that record the surge at the point of reception.

The repetitive surge generator supplies the simulated lightning wave 60 times a second to the power line or electric equipment under test. The surge thus introduced into the system may amount to only 250 or 300 volts — a relatively small voltage compared to an actual lightning stroke. However, the smaller voltage

produces the same kind of wave on the oscillograph as the larger one, and, the effect on the larger voltage can be computed exactly.

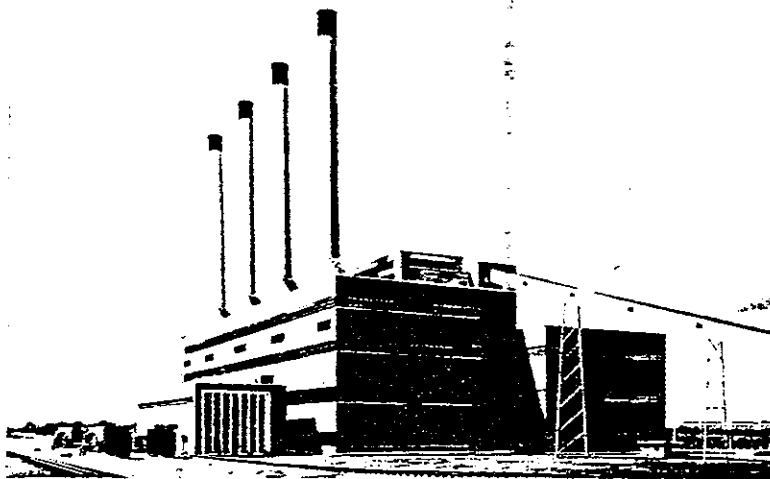
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BECAUSE of the increasing importance of mathematical methods in the field of power engineering, a group devoted exclusively to applied mathematics has been organized under the name of Mathematical Computing Service. It specializes in performing services for industries and universities desiring engineering calculations, charts and nomographs of a high degree of complexity and the treatment of related mathematical problems in the field of power engineering. An important function of this group is the mathematical formulation and complete solution of a problem from given physical data. The staff consists of consultants holding doctorate degrees who are qualified to treat problems in applied mathematics related to the physical sciences. If your power plant organization is interested in using such a service, the Editors will put you in touch with it if you will drop us a line, referring to the Engineers' Preview.

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ALLIS-CHALMERS now has under construction its first completely supercharged steam turbine generator. It is shown in the illustration alongside a standard hydrogen cooled machine having the same rating. See next page.

This latest and most important step in the history of size reduction of steam turbine generators is a further development following the first use of supercharged cooling in the rotor of a 60,000-kw Allis-Chalmers generator installed in mid-1951 (POWER ENGINEERING, January 1952).



Artist's sketch of the new Will County generating station to be built between Lockport and Lemont, Ill.