

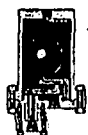
**there's a *RIGHT* way
to trap a Steam Line!**

JUST SPECIFY Clark CONTROLS

Thanks to the proven dependability and completeness of the Clark steam trap and regulator lines, power engineers can meet most of their requirements simply by calling a Clark representative. For there's a "right" Clark steam trap for every purpose. Clark makes the famous patented Duo-Step inverted bucket traps that

handle double the usual amount of condensate. In addition, Clark manufactures open bucket and float type traps as well as pressure regulators and strainers.

So call on Clark for all fluid control requirements. There are Clark representatives in most major cities.



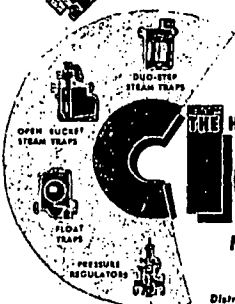
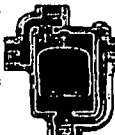
SERIES "450" FLOAT TRAP. For drainage where continuous flow is desired, or for maintaining liquid levels. Steel construction for pressures to 600 P.S.I. Compound linkage gives larger capacity. Size 1/2" to 2".

SERIES "80"-D (DUO-STEP) TRAPS. Cast steel construction for pressures up to 750 P.S.I. and temperatures to 450°F. Equipped with Duo-Step leverage and Venting, Clark-loy seats and discs. Pipe sizes from 1/2" to 2".



"Y" SELF-CLEANING STRAINERS. Remove dirt, scale and grit from steam, fluid and gas lines. Steel 1/2" to 3" I.P.S.

SERIES "60" INVERTED BUCKET TRAP. Choice of horizontal or vertical inlet or outlet. For pressures up to 150 P.S.I. "Clark-loy" guided disc and seat.



THE HOME OF DUO-STEP LEVERAGE
Clark

MANUFACTURING COMPANY

1830 EAST 38th STREET
CLEVELAND 14, OHIO

Distributors and Representatives in all major cities

More TECHNICAL BRIEFS

Continued on page 152

necessary to open the armature circuit to stop the motor. It is possible to operate with a closed loop system without circuit breakers which, because of the control, has many advantages.

Overload current-limit protection can be provided with field control by inherent time delay, external time delay, differential field feed-back, field fluttering relay and by means of the regulating system. Operation of the field circuit under fault conditions includes switching of generator field with generator armature circuit open and switching of field under overload. On some large machines high-rupturing-capacity circuit breakers are installed between the generators and motors, and on heavy overloads a high-speed overload relay trips a fast-operating field switch in the motor and generator field circuits. *AIEE conference. Paper can be obtained from the author.*

Bids for six 100,000-hp hydraulic turbines for Chief Joseph Dam on the Columbia River near Bridgeport, Wash., have been called by the Corps of Engineers for opening May 6 at Seattle. Each turbine must have a rated capacity of 100,000 hp at 100 rpm at 165 ft head and 82,000 hp at 148 ft head. Specifications call for vertical shaft, single-runner, Francis-type turbine with plate-steel spiral cases embedded in the concrete substructure of the powerhouse. The first unit is scheduled to go on the line Sept 1, 1955.

Unless new hydroelectric projects are started on the Columbia River and its tributaries in 1953 and succeeding years, the Pacific Northwest faces the prospect of another power drought, as well as retarded growth of industry by 1960-61. That is the prediction of Bonneville Power Administration in its 1953 Advance Program report.

Present Columbia River projects now under construction will handle power needs for 1957-58, but new power sources equal to one and a half Bonneville Dams and a federal investment of \$300 million will be needed every year for the next decade to satisfy future energy requirements, expected to double by 1960.

The Ampere Medal, one of the highest French scientific honors, has been bestowed upon Professor Henri G. Andre, eminent French scientist and inventor, by the Societe Francaise de Electriciens. Professor Andre received the award in recognition of his outstanding contributions to electrical science, and, in particular, for his work in the field of electrical energy storage. Professor Andre has devoted many years to the development of the first practical rechargeable silver-zinc battery, the smallest and lightest rechargeable battery to be found in the world today.

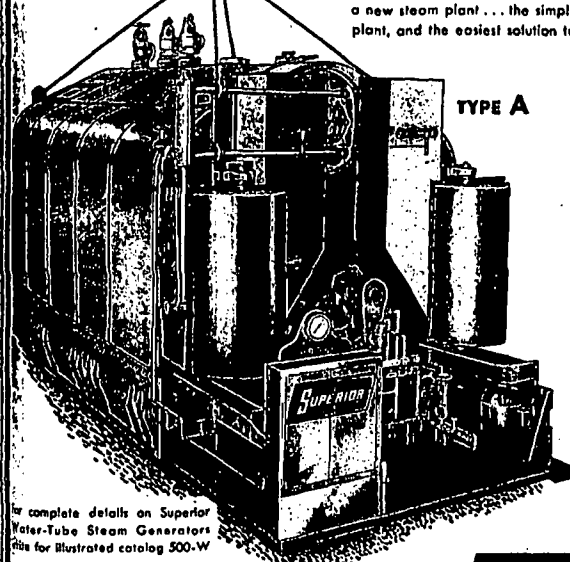
SUPERIOR WATER-TUBE

STEAM GENERATORS

Here's power plant performance in a compact package... backed by long experience in the design and manufacture of completely factory-assembled steam generators.

Superior Water-Tube Steam Generators provide efficient, economical steam for power, heat or process in industrial plants, commercial buildings, institutions and public utilities. Their rugged, heavy-duty construction assures long-lived dependability and minimum maintenance throughout years of hard usage. Each unit is performance rated and thoroughly tested at the factory to insure high efficiency operation at maximum capacity.

Superior Water-Tube Steam Generators are the ideal choice for a new steam plant... the simplest answer to expanding your present plant, and the easiest solution to replacing obsolete boilers.



TYPE A

- ◆ Completely factory-assembled and tested, Superior Water-Tube Steam Generators are backed by undivided responsibility.
- ◆ Fully automatic operation results in fuel economy... firing follows the load demand without waste.
- ◆ Built in 9 sizes with capacities ranging from 5,300 to 33,000 lbs. of steam per hour.
- ◆ Pressures to 400 p.s.i.... higher pressures on special order. Can be equipped with superheaters.
- ◆ Efficient type "A" symmetrical tube arrangement for quick steaming, even evaporation, and ease of maintenance.
- ◆ Burns any grade of oil or gas. Unobstructed fire box floor provides for installation of stoker.
- ◆ Built-in multiple induced draft fans provide cleaner, quieter, safer operation; eliminate need of expensive chimney.

For complete details on Superior Water-Tube Steam Generators write for illustrated catalog 500-W

for performance you can **BANK** on

SUPERIOR COMBUSTION INDUSTRIES INC.
TIMES TOWER, TIMES SQUARE, NEW YORK 36, N.Y.

SUPERIOR
STEAM GENERATORS