

Use 'em over and over again

for DROP-TIGHT CLOSURES!



Dart's True Ball Joint Makes the Difference

Dart Unions are leakproof on the pipeline and on the pocketbook. They're spherically ground to a true ball joint with wide, true-bearing surfaces. Because seats stay unscarred and true, these unions won't leak—and you can use them on job after job.

QUICK FACTS

- SEATS of special alloy bronze provide high resistance to pitting and corrosion
- BODIES AND NUTS are practically indestructible. They're air-refined, high test iron
- SHOULDERS are tough and heavy — made to take the most violent wrenching

Ask your supplier for Darts. You'll save money and leaks. And, if you do the installing job yourself, you'll save muscle and sweat also!

DART UNION COMPANY
Providence 3, Rhode Island
The Fairbanks Co. — Distributors
Boston • New York • Pittsburgh • Rome, Ga.



FIGHT POWER COSTS

have taken a long step toward reducing investment costs.

"Feedwater treatment costs greatly plant to plant, and the are obvious. If you can tie the powerhouse needs into one treatment system, you reduce investment costs. But it's a highly job.

"Piping, which embraces pipes, anchors, expansion joints, drains, traps, vents and insulations impresses me. It runs for about 24% of the total power investment. We constantly are establishing standards that give us the best piping construction codes and satisfactory service.

"Our figures, Table III, do not any facilities for electric generation. Here we cover necessary electrical distribution elements, instruments and controls. We make every effort to use individual devices to the same used elsewhere in the plant. Maintenance men from having a number of different designs for the same function. What's more, we reduce required storeroom stocks.

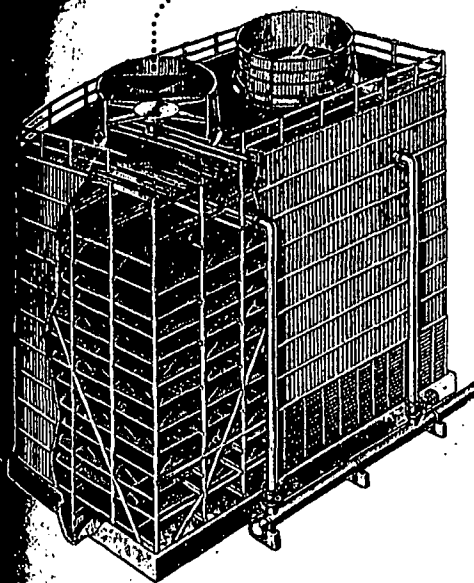
"Building-construction costs are the greatest area for savings in years. The reason, of course, is the trend towards outdoor construction everywhere. This idea has been to the point where one of our plants has got away with a building investment only slightly over 10%.

CONSTRUCTION COSTS

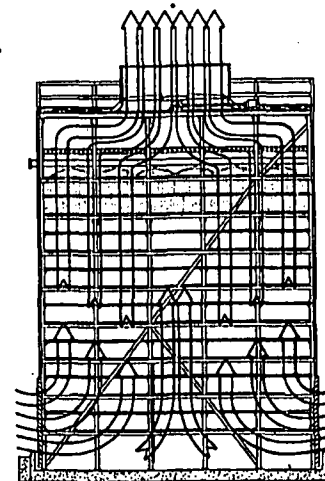
Furness and Cheney: "We engineers frequently called upon to 'off the cuff' estimates of total cost of a proposed power plant. For the trial you can't tie it to boiler output, nor for that matter don't size check with condensers. So we tried to establish three simple factors: one each for boiler plant, turbine and condenser installation. Turbine gear capacity has a definite relation with turbine size so we consider it of the turbine plant.

"Better-known manufacturers can you on fairly short notice accurate estimates of current purchase costs of boilers, turbines, switchgear and condensers. Total costs of construction including field labor bear a more constant relationship to market of these major equipment pieces. This background and a list of costs of completed projects, of all types and sizes of jobs from 1952, a series of factors worked up. And this is what we

"The factors are simply multiplied which you apply to a single



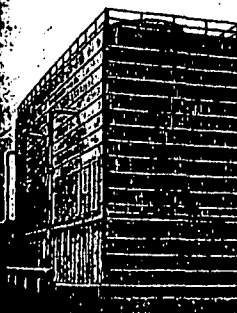
Efficiency of FLUOR COUNTERFLO Cooling Towers begins at the top



Air distribution is controlled at every stage of its travel through the tower. Louver height is designed to obtain the desired intake velocity and wind-deflectors inside the tower uniformly direct air currents to all areas. Approach to the desired wet-bulb temperature is easily accomplished and performance to customer's specifications is guaranteed in every case.

Heavy stainless steel fan blades are finely balanced, resist corrosion and are mounted on shafts whose exceptionally high fatigue strength has been substantiated by strain gauge tests and actual use. Pitch is adjustable to efficiently handle required air volumes at minimum tip speeds and horsepower requirements — more air per kilowatt. Speed reducers incorporating spiral bevel gears feature oil-bath lubrication and dry-air breather. The low-speed fan shaft is mounted on special steep angle thrust with radial bearings to take the combined gear thrust, fan thrust and weight of fan assembly. Driving mechanisms are built for hard-wearing, maintenance-free performance and for smooth, quiet operation.

Vibration Cut-out switches, exclusive with Fluor Cooling Towers, are an emergency safety device that stops the motor should excessive vibration accidentally occur, preventing possible damage to the tower or mechanical equipment. Design employing internal gusset plates duplicates that used in wooden bridge construction. These connectors add greater tensile and compressive strength to structural members, lower the total weight of towers, require less erection time and materially increase tower life. Sloping and decks of rough-finished redwood with minimum one-inch dimension are used as scaffolding during erection and provide maximum deck surface with negligible air pressure drop through the tower.



Only Fluor Counterflo Cooling Towers are completely prefabricated. All cutting, drilling, and nailing is performed at the factory and tower parts are "packaged" for rapid delivery, marked for orderly assembly. More efficient control of the quality of straight-grained heart of California redwood and excellent workmanship in Fluor towers are maintained through prefabrication. Inexperienced craftsmen and laborers under Fluor's supervision can erect a Fluor tower in a minimum of time and at considerable savings in erection costs. Prefabrication means standardization; parts that may become worn or damaged over the years may be replaced economically. Uniformity of appearance as well as performance is assured.

BE SURE WITH **FLUOR**

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FLUOR INTERNATIONAL, FLUOR

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