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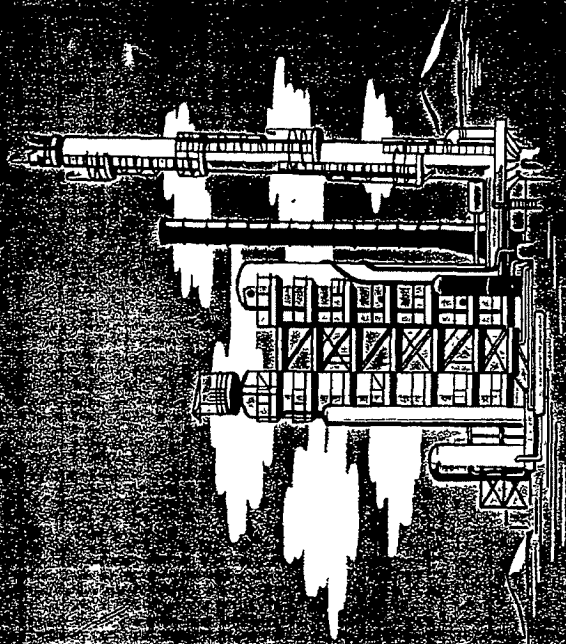
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July 1958

From the
Ground up



Another refinery by Bechtel — custom-planned to meet the owner's requirements, process-designed, engineered and built from the ground up under single responsibility. Performance all the way that only a complete self-contained engineering-construction organization can provide.



BECHTEL CORPORATION

Bechtel Briefs

JULY 1958



Strictly San Francisco... And so quaint are its old-fashioned cable cars that BECHTEL BRIEFS offers on this month's cover a summertime nostalgic touch.

More Rective Power Through New Condenser at Highgrove

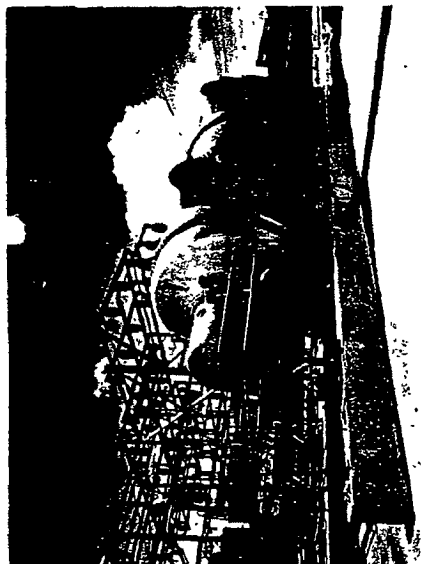
BURNING: so quietly that it can be barely heard while one is standing alongside, is now burning at 600 RPM at Southern California Edison's San Onofre Nuclear Generating Station. Similar in construction to a large, continuous motor, the rotor of this machine produces alternating north and south magnetic poles and compresses the revolving field to pulsing within the stator. The whole assembly is energized and energizes, split and internally is cooled by hydrogen gas. The hydrogen in which the rotor turns so quietly would air

In operation the synchronous condenser at lines power losses by improving the power factor of the system. By automatically controlling the field excitation the machine varies the power factor and raises or lowers the voltage to a pre-determined level. Improving the power factor increases the kilowatt capacity of the transmission lines to deliver effective power to the utilization point.

One of the most important criteria of an electrical power system is to make available at the collection point the maximum amount of effective power, and relatively high losses are caused by certain electrical phenomena when power is transmitted long distances by high voltage lines. The synchronous condenser is a device used to overcome or minimize these losses.

[illegible]

The Highvane condenser, second in a series to be added to follow the system by Bechtel & Power Division, follows installation of a similar 60,000 KVA machine placed in operation at McAs Substation, early in 1949. Work is now only in progress at Springfield, where a 40,000 KVA is being installed by Assistant Superintendent O. J. Rogers, and at Turle Substation (Orange County) where preparation for installation of another 60,000 KVA is going forward under direction of Assistant Superintendent Jack Pruett.

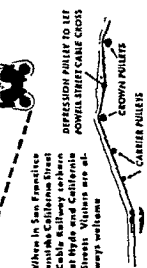


WESTVACO CONTRACT



THE GRIP

In principle, nothing is simpler than pulling a vehicle up a hill with a rope. In practice the task is a miracle of legerdemain. Fundamentally, the car moves when the driver pulls on the rope. But the rope has to be lifted into the air, kept continuously taut, and then pulled in again by means of a motor car. The following accompanying diagram will give you some idea of the grip, with a close-up of its parts.



Col. V No. 7
published in July, 1950. By and For
the Employees of Bechtel Corporation,
Engineers and Constructors.

**WESTVACO CONTRACT
FOR BECHTEL**

The Food Machinery and Chemical Corporation's Westvaco Chemical Division announces award to the Bechtel Corporation of engineering and construction of two units for the manufacture of phosphorus and commercial phos-

Ed Dorresten is acting as coordinator for all month projects and will follow the jobs right on through construction.

One project is concerned with the erection at Lawrence, Kansas, of a new plant for the processing of phosphorus into soluble phosphates for use by the soap, textile, oil, and chemical industries. Engineering work is being done by the Bethel Refinery Engineering Division under Hugh Hoyle.

The other unit has as its major concern the addition of a furnace and facilities to be installed at Pocatello, Idaho, for the manufacture of elemental phosphorus from phosphate shale deposits found in the vicinity of the plant. This will be in addition to the two furnaces already in operation. Engineering work is under the

The Bechtel contract calls for the detailed design and construction of both units. John D. Anderson, Chief Engineer of Westvaco, is responsible for basic design. Scheduled completion date for both is planned for late spring of 1951.

Couldn't Stop the Press

Big news in the office at least requires an announcement. The news is the Bechtel Picnic which may be over by the time you read this for it's scheduled for June 24th at Happy Hollow Park near the Contra Costa Steam Plant. But don't worry. Next issue will give the details of the picnic with more information.

Purchasing

THE SAN FRANCISCO Purchasing Department made purchases totaling over \$2,000,000 in 1949 and 1950. Items varying from one-half ounce spring to 80-ton trucks appear on the actual list. Purchases of thousands of items of the same kind are handled by the same person. The range is as of a necessity accurate and efficient.

Each unit order must be screened with four major objectives in mind: the highest quality available, conformance to a specified design, most reasonable price and receipt at job site to meet the construction schedule. The screening is done by the purchasing officer, who requires engineering consultation between the different sections of the department.

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The buyers cooperate with the Engineering Department during the design stage to ascertain that any specified item will be available at the required date as well as being of economic desirability. Even before that when the project was being bid they had cooperated with the Estimating Department. Immediately on approval of engineering design they really go to work placing firm orders to insure delivery of material in the field.

EXPEDITORS

After the order is placed it must be followed "If the business of the expeditor to check the orders before delivery dates are due and make sure that delivery will arrive as required. If there is possibility of delay it is up to the expeditor to rectify the situation of special handling

INSPECTORS

Representatives of the Purchasing Department in the field, inspect items during manufacture for quality. J. M. Sorola is stationed in the eastern area, R. E. Smith on the north central and L. C. Torjensen in the southwest. In addition to having a good engineering and technical background they must have a direct acquaintance with construction, manufacturing, and plant operations. Their absence from the home office prevented their being included in the attendant photo-graphs.

CLERICAL Maintaining the files, writing the purchase orders, and taking care of the great volume of paper work in conjunction with the foregoing operations requires an alert and trained clerical group. Adjacent photographs show the personnel with the exception of Sarah Kelly, who came into the group since the pictures were made.

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