

S-E-Co.
COAL VALVES

A detailed black and white photograph of a large industrial coal valve. The valve features a prominent handwheel on the left side, which is connected to a complex internal mechanism. Two heavy chains hang from the bottom of the handwheel assembly. The entire device is mounted on a sturdy metal frame. The background is dark and textured, suggesting an industrial setting.

SIZES—1½" to 30"
TYPES—Square or round top flanges, belted or stub, bottom flange—square or round or oval.
OPERATION—Hand wheel, pocket screw, offset pocket screw, extended shaft or motorized.
POSITION—Vertical or inclined axis.
BODY MATERIALS—Carbon steel, stainless, rubber-lined.
FEATURES—Gate position indicators at top, bottom or on chain. Operating pressure variable up to 150 lb. atmospheric pressure per sq. in. Special designs made to fit your needs.

The logo for Stock Engineering Co. is a rectangular emblem with a double-lined border. The word "STOCK" is written in large, bold, serif capital letters across the top. Below it, "ENGINEERING CO." is written in a smaller, similar font.

S.E.CO.
Coal Valves and Coal Scales

(Continued from page 77)

amount was relatively small. For this reason, stoppage of chemical feed to the old softeners caused immediate increase in hardness which rapidly approached that of the raw water.

EFFLUENT TURBIDITY

Turbidity of the effluent from the new softener is unusually low. The average for the three months of operation was 9 ppm. Thorough seeding of the water and filtering of the smaller particles by the larger particles of the sludge bed probably caused the low turbidity. Visual estimates made during the operation of the conventional softeners indicate that turbidities from these units were several times as high as from the sludge-blanket softener.

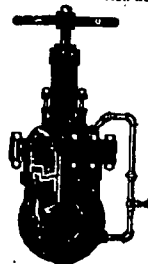
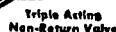
Sometimes the turbidity from a conventional-type softener is less than 10 ppm, but generally it is substantially higher; at this plant it was regularly higher than from most hot lime-soda softeners. With hot lime-soda treatment the pH of the water must be higher than 10.0 for effective softening; therefore, turbidity cannot be controlled by varying the pH as is done in the cold process where clarification is the essential problem. At this plant the pH was substantially the same with both the old and the new softeners, so that the better clarification in the new unit could be accounted for only by the filtering action of the concentrated sludge bed and by differences in size of particles formed in the two types.

Lower hardness and lower turbidity of the effluent from the sludge-blanket design softener reduces the phosphate requirements, since all of the calcium in the form of hardness and at least part of the calcium in the form of suspended particles of calcium carbonate must be reacted with by phosphate in the second stage.

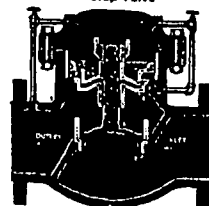
EFFECT OF FLOW CHANGES

The sludge bed was found to be equally effective for silica and turbidity removal at all rates of flow varying from 10 percent to 80 percent of capacity. In normal plant operation considerable variations in rates of condensate return and steam demand caused large changes in the amount of makeup required. These variations did not unduly affect turbidity or silica removal at any time.

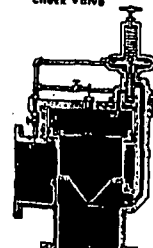
When the new softener was first operated, the sludge level was kept



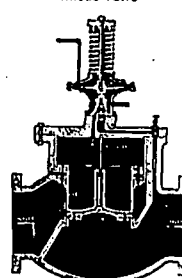
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