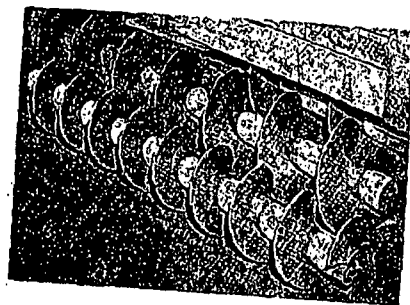


More PRACTICAL IDEAS



Enameled Coal Screws Save Dollars

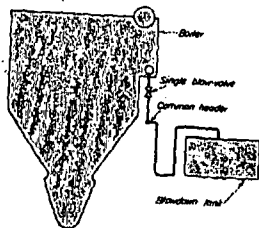
Our three 450-hp and two 250-hp boilers burn coal. We had a troublesome corrosion problem a few years back in conveying coal from storage hopper to boilers. Sulfur in wet coal formed sulfuric acid, attacking the screw conveyors and housings. Screws lasted only three months.

First, we used rubber coating. But although life of spirals was extended, cost was high and friction increased. Then we tried industrial porcelain enamel. Both the spirals and housings

were sent to the Erie Enameling Co. They applied a high-gloss, acid- and impact-resistant enamel. Screws have been in service for 1 1/2 years. Besides, less horsepower is needed to operate conveyors. All new conveyors are now enameled before installation. And, when bare steel begins to show, we take conveyor out and send it to Erie for a new coat. Thus we get the equivalent of a new conveyor for one-third the cost of a new one. And with less outage time.

BOB HEDGES New York, N. Y.

Stops Water Hammer in Blowdown Line



We HAD TROUBLE with boiler blowdown system. Each time that any one of our boilers was shut down before midnight, there was water hammer in blow lines early next morning. Water hammer was not severe at first, but became louder and louder until it was pretty bad.

Boiler blow valves are old-fashioned, gear-lift, solid-disk, single-valve type and were no longer tight enough to seal

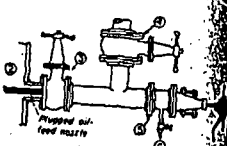
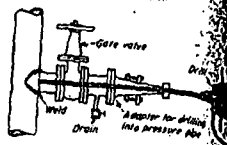
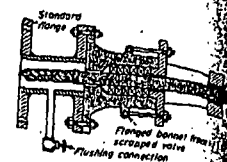
boiler water after frequent open-and-closing. Lines with leaking valves were much hotter than others.

Load condition was such that we didn't have chance to regrind valves last season. As we were short of valves, neither could we replace them nor could we install new seal valves beyond them.

Inspecting blowdown system, we found trouble. Blowdown line of each boiler was connected to a common header and common header went to top of blowdown tank. System thus made a large U-tube working as dead pocket for condensate. So repeated flushing and condensing cycles of leaking boiler water pushed, then drew back water column in dead pocket. Result was a series of water hammers, sketch.

We cut a hole in bottom of common header, welded a piece of pipe, installed a 1/4-in. valve, and led the pipe to ash trench. By opening this small valve to drain common header, water hammers eventually stopped bothering us.

H C Wu Taipei, Free China



Drilling Into Lines Under Pressure

Here are plant-tested methods for drilling into lines or vessels under pressure. Most adapter parts are from scrap.

Top sketch shows adapter. We use this for putting a 2-in. connection on a 12-in. gas-oil line. Actual drilling took 10 minutes. Drill was 1 1/2 in. No trouble of chips getting under valve because 1-in. flushing connection is to rid of chips.

Drill 1/2 in. smaller than ID of pipe. Pressure drop across orifice opening negligible even in high-pressure vessels.

To make adapter in top sketch: (1) Weld nozzle to pipe that's to be tapped. (2) Fasten gate valve and drill equipment shown.

Second sketch shows adapter hooked up, ready for drilling. To drill: (1) Open gate valve, then drain line. (2) Start drilling. (3) After drilling through pipe, pull drill clear of gate valve and shut off. (4) Remove drilling equipment, and hook up piping.

Bottom sketch shows method of clearing out plugged-up lead nozzles in the reactor of our fluid catalytic refining unit: (1) Close valves 3 and 4. (2) Remove blind flange at 5 and fasten drilling equipment. (3) Insert drill and open valve 3. (4) Drill out plugged nozzle and flush out as necessary with valve connection 6. (5) Pull drill clear out of valve 3 and shut valve 6. Install blind flange at 5, open valves 3 and 4.

S B Moss Montreal, Quebec (Continued on page 128)

RIGHT DRAFT

ALLIS-CHALMERS POWER PLANT CONTROL

Stepless, Wide Range Speed Control of Direct Coupled Draft Fans

When Type 257 Liquid Rheostats control the speed of boiler fans driven by wound rotor motors you get:

- Immediate response to varying draft conditions.
- Smooth, continuous, stepless speed control.
- Equal sensitivity over the entire operating range.

HOW IT WORKS. Motor speed is varied by increasing and decreasing resistance. This is accomplished by raising and lowering electrodes and the level of current-carrying electrolyte. A pilot drive transmits draft condition to a lifting mechanism which controls electrode position and electrolyte level. A full resistance range is provided in only 10 inches of electrode travel. The basic principle of liquid rheostat operation plus the utilization of specially engineered electrodes gives a linear relationship between motor speed and electrode travel over the complete rheostat range.

Since the rheostat is not mechanically connected to the motor it may be located to suit the most convenient plant layout. For complete details, contact your Allis-Chalmers representative or write for leaflet 1457544.

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127