

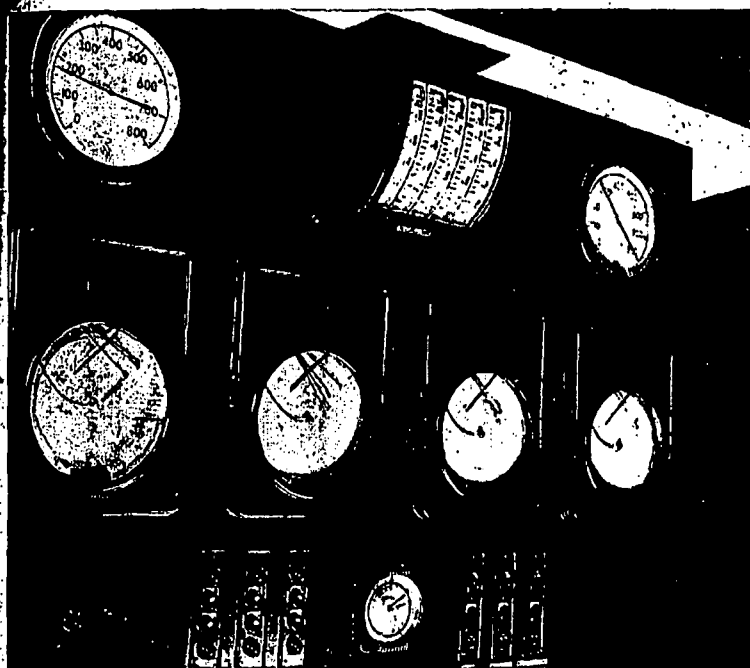


Fig. 4—New boiler's meter panel on which are mounted meters for recording steam flow and air flow; steam, combustion-air, flue-gas and feedwater temperatures; indicating draft pressure at five points in furnace, boiler and economizer; and for recording feedwater level in boiler to guide operator

other schedule can be selected on the control if desired, to suit operation.

Duplex drives are provided on the stoker, a 4-speed squirrel-cage motor and a constant-speed induction motor with a variable-speed transmission. Each con-

nects to the stoker-drive shaft by a roller chain and sprockets. Normally the induction motor through the variable-speed transmission drives the stoker because it gives better speed control.

By using forced- and induced-draft

fans on the boiler the plant's original stack has ample capacity for the increased load. These fans are driven by constant-speed motors, stoker draft being controlled manually by dampers in the stoker and extension-grate windbox connections. Furnace pressure is regulated by automatic control that positions the uptake damper between the induced-draft fan and breeching.

Outside of furnace-draft control, automatic control was not provided because normally the boiler will supply a base load of about 100,000 lb of steam per hour. However, in the boiler and its combustion equipment, provisions have been made for the installation of automatic combustion control if this becomes desirable.

About 60% of the boiler's feedwater is condensate return and 40% raw river water filtered through sand with no treatment. Condensate and makeup mix in a 300,000-lb-per-hr deaerating feedwater heater, are heated to 212 F and pumped (Continued on page 138)

PRINCIPAL STEAM AND ELECTRICAL EQUIPMENT

Boiler-Plant Extension of E B Eddy Co

BOILER AND AUXILIARIES:

Boiler.....Babcock-Wilcox & Goldie-McCulloch
Boiler: 2-drum bent-tube integral furnace; waterwalls made up of bare tubes, stud tubes and Bailey blocks; 12,267 sq ft of heating surface in boiler and waterwalls; economizer; 3720 sq ft of water-heating surface; rated steaming capacity 100,000 lb per hr, continuous; 460-psi design pressure, 175-psi operating pressure at superheater outlet; 5800 cu ft furnace volume; 25,000 Btu maximum heat release per cu ft per hr; superheater; drainable, 130-F superheat, 508-F total steam temperature
Boiler refractories.....Babcock-Wilcox & Goldie-McCulloch
Boiler heat insulation.....Atlas Asbestos Co
Boiler blowers.....Diamond Specialty
Ash gates.....Link-Belt Co
Boiler steel casing, ducts, breechings..Babcock-Wilcox & Goldie-McCulloch

COMBUSTION EQUIPMENT:

Stoker.....American Engineering Co
Taylor, watercooled, underfeed, 17 ft, 5% in. wide by 16 ft, 3 in. long; 10 retorts; 45 tuyeres; actual grate area, 318 sq ft; projected grate area, 286 sq ft; combustion rate, 10,400 lb per hr
Stoker multispeed-motor drive.....Lincoln Electric Co
Totally inclosed, 5 hp, 440 v, 450 to 1200 rpm, squirrel cage
Motor control, remote.....Cutler-Hammer, Inc
Stoker motor on variable-speed drive.....Canadian General Elec Co
Totally inclosed, 5 hp, 440 v, 1160 rpm, squirrel cage
Motor-starter pushbutton.....Canadian General Electric Co
Extension-grate hydraulic dump.....Logansport Machine Works
Extension-grate dump control.....Eagle Sign Corp
Pump motor on grate dump.....Canadian General Electric Co
Totally inclosed, 5 hp, 440 v, 1160 rpm, squirrel cage
Motor starter, remote pushbutton.....Canadian General Electric Co
Safety switches on stoker motors.....Square D Co
Furnace pressure regulator.....A W Cash Co
Forced-draft fan, vane control.....Sheldons, Ltd
Motor driven, 49,000 lb per hr at 3.25-in. wg and 100 F
Forced-draft fan motor.....Canadian General Electric Co
Totally inclosed, 100 hp, 1150 rpm, 440 v, squirrel cage

Consulting Engineers: Hardy S Ferguson & Co

Induced-draft fan.....Sheldons, Ltd
One, 200,000 lb per hr, 7.4 wg at 425 F
Induced-draft fan motor.....Canadian General Electric Co
Totally inclosed, 125 hp, 1160 rpm, 440 v, squirrel cage
Motor starters, pushbutton.....Canadian General Electric Co
Safety switches.....Square D Co

VALVES, PIPING AND TRAPS:

Safety valves, Consolidated.....Manning, Maxwell & Moore
Nonreturn valves.....Crane, Ltd
Blowdown valves.....Edward Valves, Inc
Drain valves.....Crane, Ltd
High-pressure valves.....Crane Ltd
Feedwater valves.....Edward Valves, Inc
Piping insulation.....Insulation Products Co
Traps.....Trevise Mfg Co

FEEDWATER SYSTEM:

Feedwater chemists.....W H and L D Betts Co
Feedwater acid pumps.....Milton Roy Pump Co
Acid-feeder control.....Canadian General Electric Co
Feedwater heater (Cochrane).....Canadian Allis-Chalmers
Deaerating, 300,000 lb per hr, from 65 to 212 F
Feedwater automatic controls (Copes).....Peacock Bros
Excess-pressure regulator (Copes).....Peacock Bros
Water columns.....Diamond Specialty
Feed pumps, 2.....Babcock-Wilcox & Goldie-McCulloch
One, turbine driven, 225,000 lb per hr, 350 psi
One, motor driven, 150,000 lb per hr, 300 psi (standby)

METERS:

Boiler meter and control panel.....Bailey Meter Co
Boiler meter (steam-flow air-flow), steam temperature and pressure recorders, flue-gas temperature recorders, 5-point draft gage and feedwater-level recorder.....Bailey Meter Co
Steam-pressure gage.....Manning, Maxwell & Moore
Hydraulic-pressure gage.....U. S. Gauge Co