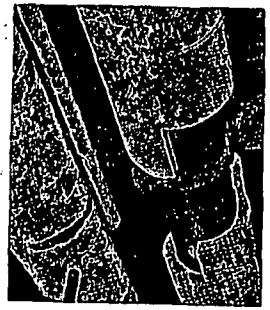
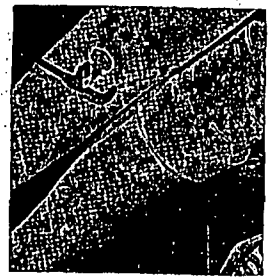


22 Tightening tie wire around insulation on heater bleed from turbine

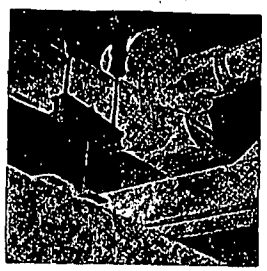


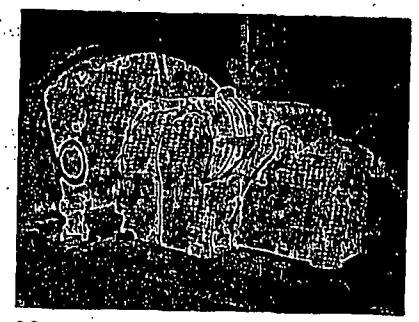
23 First layer of insulation on 14-in. reheat line. Total thickness is 6 in.



24 Second layer, finish and expansion-joint covering on the reheat lines

25 Insulation and supports for main steam and reheat lines, Unit No. 1





26 High-pressure end of turbine for No. 2 unit with insulation applied. Casing over insulation completes the job

Details of Whiting Plant Insulation

Table below gives schedule of thicknesses chosen for various temperatures and pipe sizes at Whiting. All high-temperature insulation is Kaylo (hydrous calcium silicate) preformed for application on flat and curved equipment and pipes in the plant.

Pipe insulation is nested; that is, outside diameter of first layer is a size that permits second layer to fit snugly. Fastening method varies with surface insulated, wires, studs and lath being used as illustrated. Pipes and valves are finished with canvas and cement to give a smooth exterior, easy to paint and keep clean at all times.

Expansion joints in pipe, duct and flat-surface insulation are specially constructed and carefully located to insure freedom of movement without danger to the insulation. Metal-corner beads protect block edges, give a neat and true finish of lasting quality.

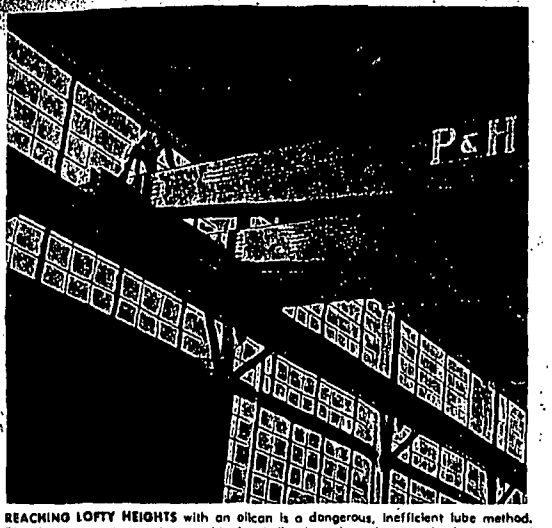
Though only high-temperature insulation is illustrated here, a number of other materials are used in the 40-90 F range. Table below shows typical specifications for them.

With Units No. 1 and 2 operating, and No. 3 nearing completion, experience proves the application methods illustrated give good service.

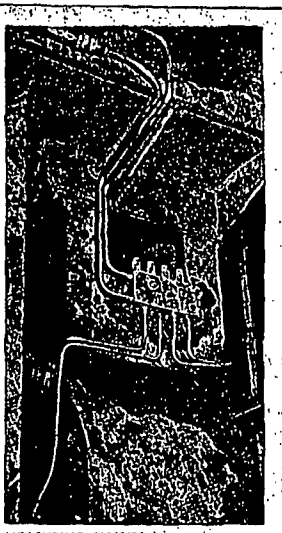
Insulation Thickness for Various Pipe Sizes and Temperatures

	Pipe Sizes in Inches, With High and Low Temperatures											
	½-¾		1-1¼		2-4		5-8		10-14		16 & over	
Degrees, F	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
150- 350	—	1	—	1	—	1	—	1½	—	1½	—	1½
350- 450	—	1½	—	1½	—	1½	—	2	—	2½	—	2½
450- 550	—	2	—	2	—	2	—	2½	—	3	—	3
550- 650	2	—	2	—	1½	1½	1½	2	1½	2	1½	2½
650- 800	2	—	2	—	1½	2	1½	2½	1½	2½	2	2½
800- 900	2	—	2	—	2	2	2½	2	2½	2½	2½	3
900-1000	2	—	1½	1½	2	2½	2½	2½	3	2½	3	3
1000-1200	2½	—	1½	1½	2	2½	2½	2½	3	3	3	3½

40-60	Two ½-in. layers of antisweat covering (well water and drinking water)
60-90	One layer of 1-in. wool felt (river water)
60-90	Cork spray built up to a minimum of ½-in. thickness
	Sheet-metal protective covering
	Asbestos-cloth protective covering
	Waterproof cement
40-90	One layer 1-in. hair felt tied on with jute twine or No. 14 Copperweld wire on 6-in. centers, ½-in. asbestos cement; poultry netting with ¼-in. waterproof cement finish



REACHING LOFTY HEIGHTS with an oilcan is a dangerous, inefficient lube method. Oiler has strong temptation to skip hurriedly through and scurry back to ground

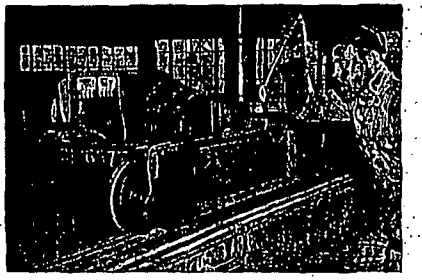


MEASURING VALVES respond to pump pressure, doling out grease at bearings

Crane Lubrication

Made Safe, Sure, With Centralized System

By J A GORDON
Farrel Corporation



CENTRAL PUMP, hand operated, sends grease sliding through tubing to valves. Gage shows the grease pressure developed

► A CENTRALIZED LUBE SYSTEM has the lube supply at one central point with tubes radiating out to lube points on machine. In general, centralized systems show many advantages. Most obvious is simply better lubrication—proper quantity of lubricant delivered at the right time.

For some years, management at the Thypin Steel Co in New York City "farmed out" their crane maintenance, lubrication included, to an outside contractor. But they were concerned over the safety angle as well as frequency and thoroughness of lubrication.

Lubricating a crane is a hazardous job—hazardous to both oiler and men on floor below. Problem of safety and effective lubrication has been neatly licked with a centralized system.

System Details. Each crane in the plant has a single bridge and two trolleys. The bridge alone has 14 lube points. Each trolley has eight points requiring lubrication.

The new centralized lube system consists of three hand-pumped grease-dispensing units, measuring valves, piping and tubing. One pump handles the 14 points on the bridge, while the remaining two units feed the two trolleys.

The measuring valves, between pumps and lube points, are fully adjustable for lubricant quantity, besides being equipped with a positive, easily seen indicator. Each trolley has two measuring valves, one valve serving four points.

Piping. The soft grease, NLGI No. 1, is carried from each pump unit through ½-in. pipe serving as a main feeder. Since the measuring valves are hydraulically operated, a 2-pipe system is used. Pressure is alternately applied to each feeder line.

Main feeders are tapped by ⅜-in. tubing, which carries grease direct to measuring valves. Lines from valves to lube points are ¼-in. tubing.