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POWER

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A CROSS-INDEX OF SUBJECTS FOR THE MONTH

PLANT OPERATING METHODS, MAINTENANCE AND SAFETY
STEAM GENERATION, FUELS, FIRING AND COMBUSTION
TURBINES, ENGINES, AUXILIARIES; HYDRO POWER
DIESELS, GAS ENGINES AND ACCESSORIES
AIR CONDITIONING AND REFRIGERATION
ELECTRICAL EQUIPMENT, ELEVATORS
PIPING, VALVES AND SPECIALTIES
TRANSMISSION, LUBRICATION
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Cover photo taken at Water Service Laboratories

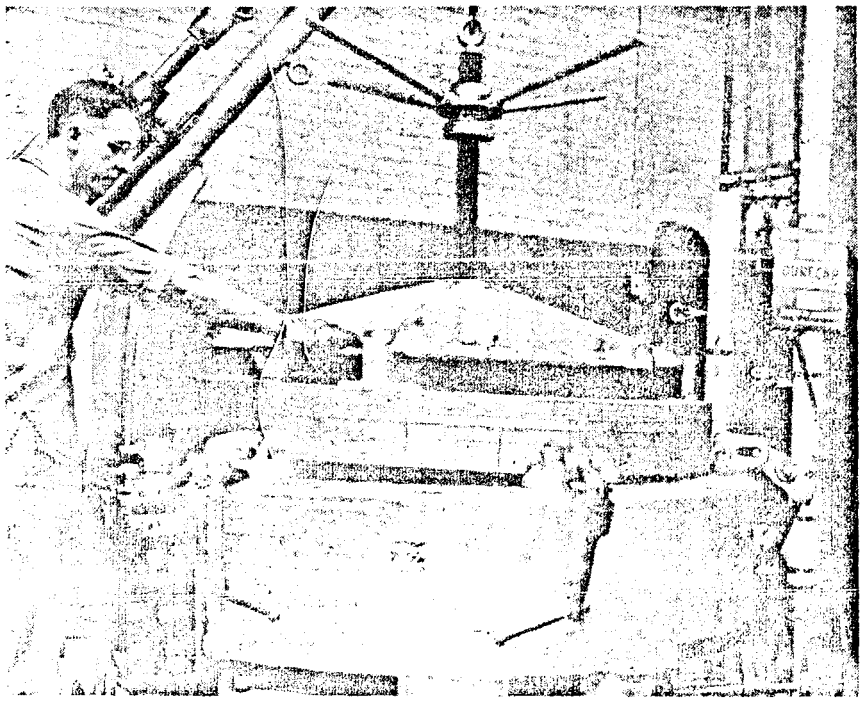
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PRACTICAL AIDS TO OPERATION

Plant-Tested Methods and Ideas for Power Men



PIPE INSULATION PROTECTS OPERATORS

PIPE INSULATION, generally used to cut fuel and operating cost by reducing heat losses from hot pipes, can also be applied to promote safe operations as was done in one plant. When the incoming steam line *S* to the molding machine was being insulated to prevent heat loss and provide constant mold temperature, two lengths were put on the condensate return line as at *C*. These extend to above shoulder height and prevent employes being burned if they contact the line. *Photo, courtesy Industrial Mineral Wool Institute.*

To Oil or Not to Oil Commutators and Brushes

MUCH HAS BEEN SAID about the merits and demerits of oil on commutators, and much evidence can be presented on either side. At one time I had charge of ten 5-hp dc motors, all driving the same kind of printing presses. The motors had driven smaller presses but were later installed on larger ones that overloaded them about 10%. In addition, they operated at 25% above normal speed by weakening their field.

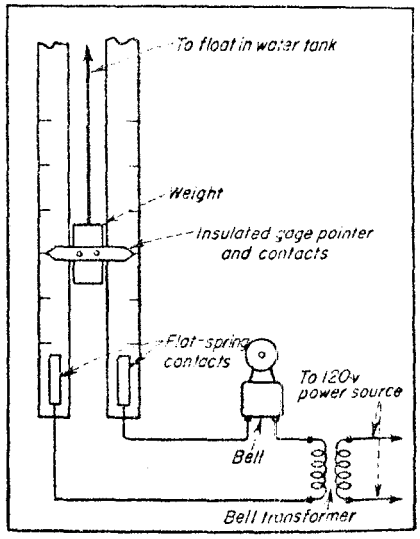
The motors, being noncommutating pole machines, sparked at their brushes and commutator. This condition was aggravated by high temperature killing brush lubrication. Operating conditions were so bad that the commutators on nine of these motors wore down completely in one year, when the motors were replaced with 7.5-hp machines.

A small amount of oil dripped from a bearing onto the commutator of the tenth motor. This unit gave no trouble, and its commutator and brushes showed practically no wear when the motor was replaced by a larger one along with the other nine. Here at least is one case where oil was beneficial to commutator and brush operation under severe conditions. I know of several other cases where oil on the commutator and brushes made it possible to operate overloaded motors when it would have been practically impossible to do so otherwise. Nevertheless, keep oil off commutators except in an emergency because it is likely in time to destroy the mica insulation.

Chicago, Ill. R C HENDERSON

Bell Gives Tongue To Water-Level Gage

TO FILL OUR ELEVATED WATER TANK from the city street main, the fireman opens a valve in the water-supply line where it runs through the boiler room.



As in the drawing, the water level in the tank is shown on a gage board that is easily seen by the fireman. At times something happened to take the fireman's attention away from filling the tank and it overflowed for some time. To bring him back onto his job I installed a bell alarm as in the diagram.

There are two flat-spring contacts, one on each side of the gage board near its bottom. I connected these to a bell through a bell-ringing transformer. Now when the tank fills and the gage goes to the bottom its pointer bridges

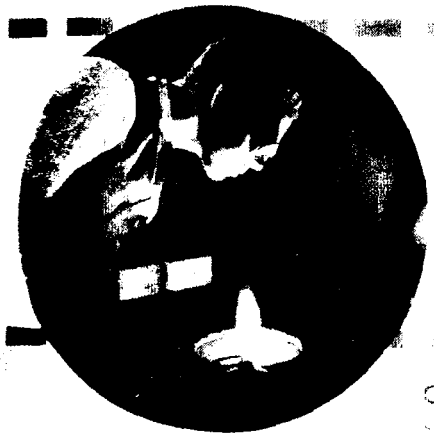
24 Years of Service

IN RAILROAD POWER PLANT

Another example proving... the right insulation correctly applied, never grows old.



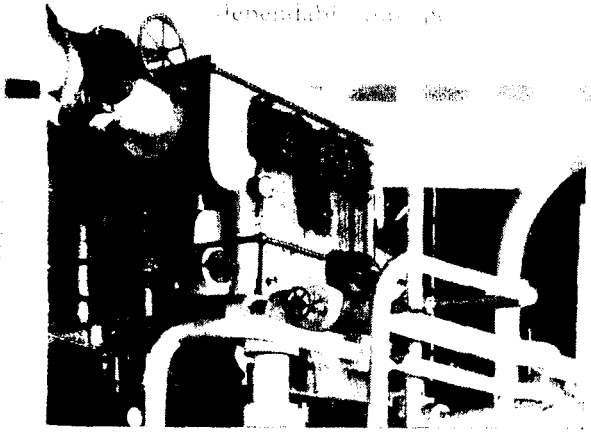
ENGINEERING: The first step in an insulation job that will give years of service, such as the Railroad installation described below, is to call in an experienced insulation engineer. Johns-Manville maintains a staff of insulation experts. Each [illegible] to use the [illegible]



RIGHT INSULATION: Many types of insulations are necessary to meet varied service conditions. In the Johns-Manville Research Laboratory—largest of its kind in the world—new [illegible] more efficient insulations have been developed. Insulation Specialists help you [illegible] for each temperature [illegible]

CORRECT APPLICATION [illegible] installs insulation [illegible] dustry's most skilled insulation applicators because (1) Each [illegible] insulation applications. Only [illegible] and up-to-date application methods [illegible] thorough, dependable [illegible]





24 YEARS YOUNG! Johns-Manville Insulations were installed in this power plant of the Missouri, Kansas, Texas Rail Road Company at Parsons, Kansas, back in 1923. Because this job was *engineered right* and *applied right*, it is still providing dependable insulation service. For help on your insulation problems, write Johns-Manville, Box 290, New York 16, N. Y.

JM

JOHNS-MANVILLE *First in* INSULATIONS