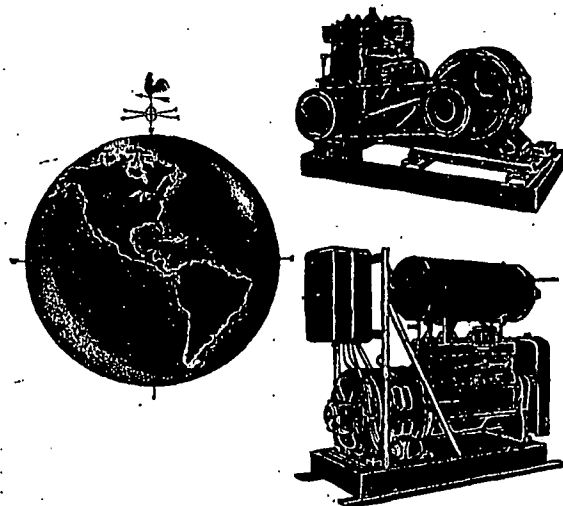


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some load shifting by industrial establishments of off-peak hours, some appeals to commercial and residential customers for conservation of electricity, and even some curtailment during the period of such emergencies. Shortage of water for hydroelectric generation, because of severe drought, is an adverse factor now in north central and north eastern parts of the United States.

### Gas-Turbine Versus Diesel Locomotive

Dr John T Rettaliata, dean of engineering at Illinois Institute of Technology, delivered an address on Sept 24 at the annual Indiana Coal Conference in Terre Haute, Ind., sponsored by Indiana Coal Preparation Utilization Society and Ohio Valley Section of American Institute of Mining and Metallurgical Engineers. He stated that the coal-burning gas-turbine locomotive is the most serious competitor to the diesel locomotive that has yet appeared. It is believed that the gas turbine, especially when using coal as a fuel, possesses more beneficial characteristics, and it is predicted that only by its adoption will the ultimate in locomotive design be achieved.

A 4000-hp coal-burning locomotive gas turbine now being constructed will soon be ready for testing, and if the anticipated performance is realized, fuel and maintenance costs will be lower than for any locomotive ever built. A do type of electric transmission, similar to that in diesel-electric locomotives, will be employed.

The gas-turbine power plant consists of a 1500-F turbine driving a compressor directly and also, through a reduction gear, a generator. The latter furnishes electric power to traction motors mounted on the axles of the locomotive. A heat exchanger will be used for improved economy.

The expected fuel cost, when using coal, will be about one half that of a diesel locomotive of similar horsepower. Lubrication costs should not exceed one tenth of those of the diesel type. The purely rotary motion of the gas turbine will result in minimum maintenance and vibration.

Besides reducing fuel costs, there are other incentives for using coal. For instance, some railroads get their chief source of revenue from hauling coal, and good customer relations are important. For conservation, use of coal is also dictated.

Rettaliata mentioned that since no water is required for operation, the gas-turbine cycle should be particularly attractive for locomotive installations. Also, elimination of the new necessary water-treating provisions for both diesel and steam locomotives should certainly be desirable.

The second power house completed on the Malad River, Idaho, has been placed on the lines this year. The new plant has a capacity of 15,500 kw and is the third of Idaho Power Co's postwar hydroelectric developments to be finished.

Reader Service Page for . . .

## NEW EQUIPMENT and TECHNICAL LITERATURE

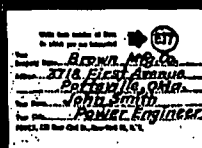
Use the handy FREE service cards for additional information on this month's new products or for copies of latest trade catalogs.

### HOW TO ORDER ADDITIONAL DATA

Be sure to fill out, completely, one coupon for each item of information you order. (See sample, right.) This gives your request authority and helps the manufacturer to address your copy completely.

When you have filled out completely one space for each item of information you want, detach along the scored lines and drop the cards in the mail.

Example



### NEW PRODUCTS & MATERIALS

See pages 142-146, 176-198

|                             |          |
|-----------------------------|----------|
| Weatherproof Meter          | page 142 |
| Line Treatment              | page 142 |
| Pressure Valves             | page 142 |
| Crack Gauge                 | page 142 |
| Gas Meter                   | page 142 |
| Gas Engine                  | page 144 |
| Well Meter                  | page 144 |
| Weather Turbine             | page 144 |
| Jet Control                 | page 144 |
| Shield-Arc Electrodes       | page 144 |
| Arresting System            | page 144 |
| Return                      | page 144 |
| Shaft Drive                 | page 144 |
| Pump                        | page 146 |
| Steel MotorReducer          | page 146 |
| Welders                     | page 146 |
| Gate Valves                 | page 146 |
| Trap                        | page 146 |
| Generator Sets              | page 146 |
| Variable-Speed Transmission | page 146 |
| Water Generator             | page 146 |
| Brush Electrode             | page 176 |
| Valve                       | page 176 |
| Pen Records                 | page 176 |
| Condenser                   | page 176 |
| Manometer                   | page 180 |
| Steam Trap                  | page 180 |
| Pump                        | page 180 |
| Recirculator                | page 182 |
| Enclosed Motors             | page 182 |
| Hydraulic-Operated Crane    | page 182 |
| Regulator                   | page 184 |
| Storage Battery             | page 184 |
| Feed Pump                   | page 184 |
| Red                         | page 186 |
| Meter                       | page 186 |
| Brake                       | page 186 |
| Carrier-Belt Fastener       | page 188 |
| Pump                        | page 188 |
| Lamp Changer                | page 188 |
| Couplings                   | page 188 |
| Controller                  | page 190 |
| Feed Oil                    | page 190 |
| Expanders                   | page 192 |
| Starter                     | page 192 |
| Relay                       | page 194 |
| Fans                        | page 194 |
| Transformer                 | page 194 |
| Reducer                     | page 196 |
| Speed Reducer               | page 196 |
| Electrodes                  | page 198 |
| Worm Gears                  | page 198 |
| Lamp                        | page 198 |

(Turn over for bulletin items)

POWER • Dec. 1948

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