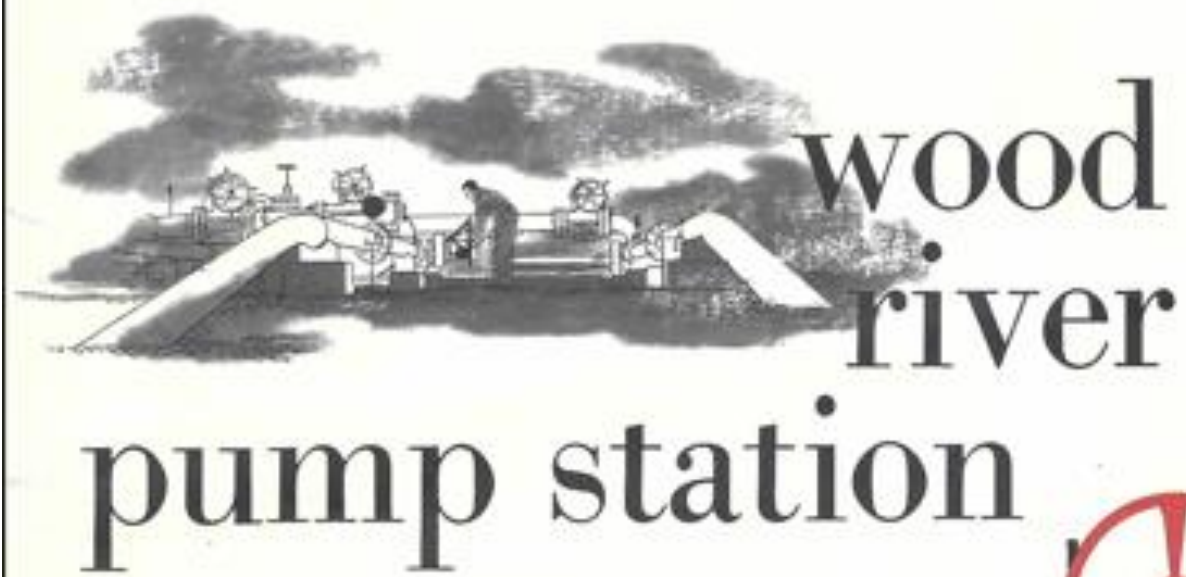
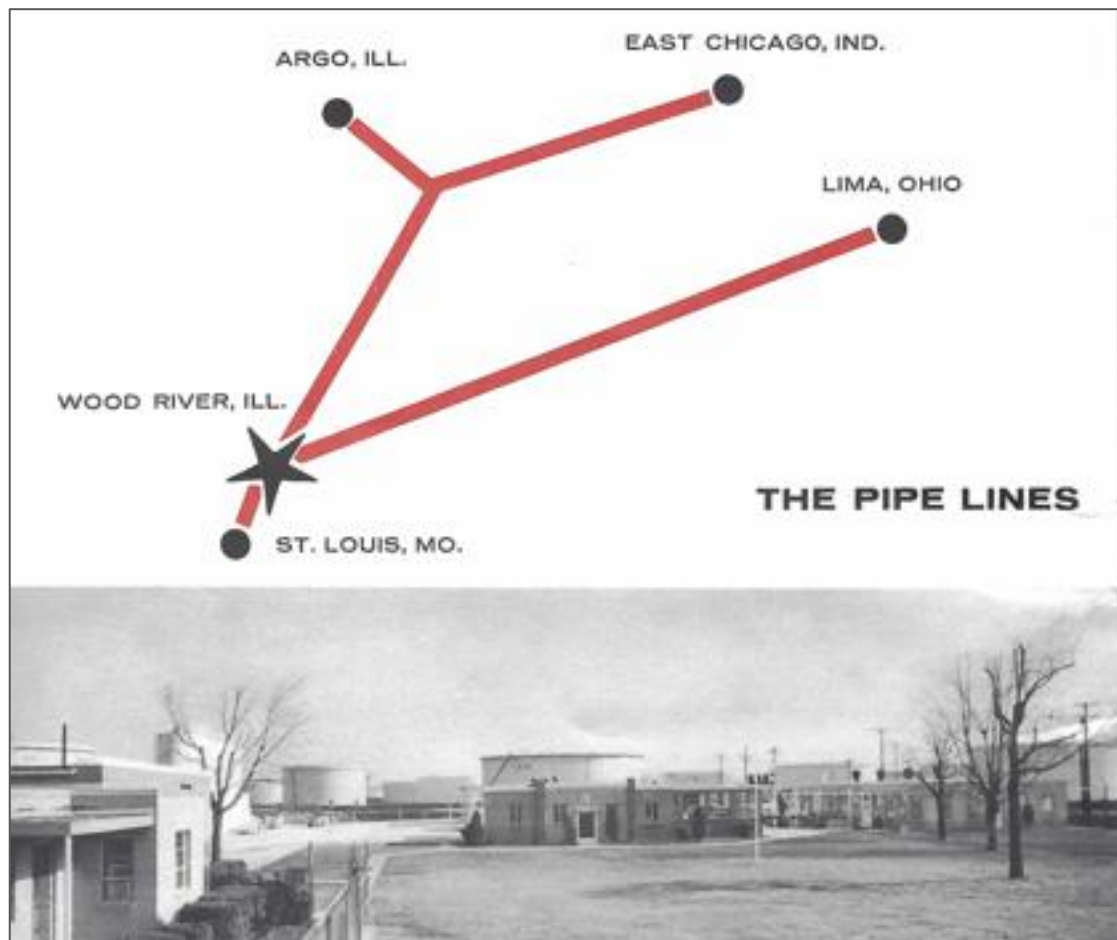




SHELL OIL COMPANY





The Wood River Pump Station is the heart of a pipeline system carrying petroleum products from Shell Oil Company's largest refinery to customers throughout the Upper Midwest.

From Wood River, the products move out through three main lines: the East Line to Lima, Ohio; the North Line to Argo, Ill., and East Chicago, Ind.; and the St. Louis Line to Missouri.

Into these Shell pipelines Wood River pumps more than 5½ million gallons of products each day. If the whole volume were gasoline, it would be enough to power over 7,700 passenger cars for a year. However, as many as 22 different products are pumped through the lines. Heating oils, jet and diesel fuels and the several grades of gasoline are the principal shipments.

Perhaps the station's functions can best be explained by following one product, gasoline, as it passes through the pump station.



Gasoline does not come to the pump station as a finished product, but as a number of separate components.

1 They arrive from Shell's Wood River Refinery through several large pipes. **2** Though these gasoline components have passed rigid tests at the refinery, their quality is continually checked throughout the pipeline system. Here they are filtered through long, cylindrical strainers at the pump station. **3** Cleaning these strainers with live steam is only one of the many steps taken to assure the highest product quality.



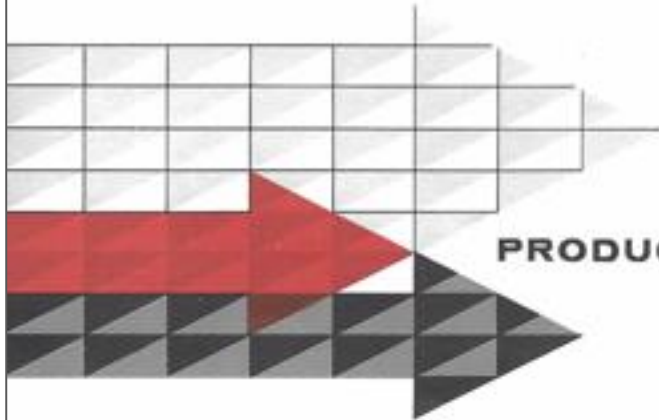
1



2



3



PRODUCTS AND PRODUCT

COMPONENTS ENTER THE STATION

From the strainers, the gasoline components are piped to the on-stream blender. **1** Continuously operating control panels regulate equipment that injects additives and blends the components into finished gasoline. **2** Tetraethyl

lead (an antiknock compound) is added to the gasoline as it flows past the horizontal lead tanks.

3 Special individual scales, constantly weighing each tank, automatically determine how much lead should be added.

The tanks weigh more than 50 tons apiece. **4** The verticle tanks contain a de-icer (to prevent cold weather stalling), a dye (red for premium and orange for regular) and TCP® to prevent spark plug misfiring. These also are blended in the gasoline.



ON-STREAM BLENDING

2



3

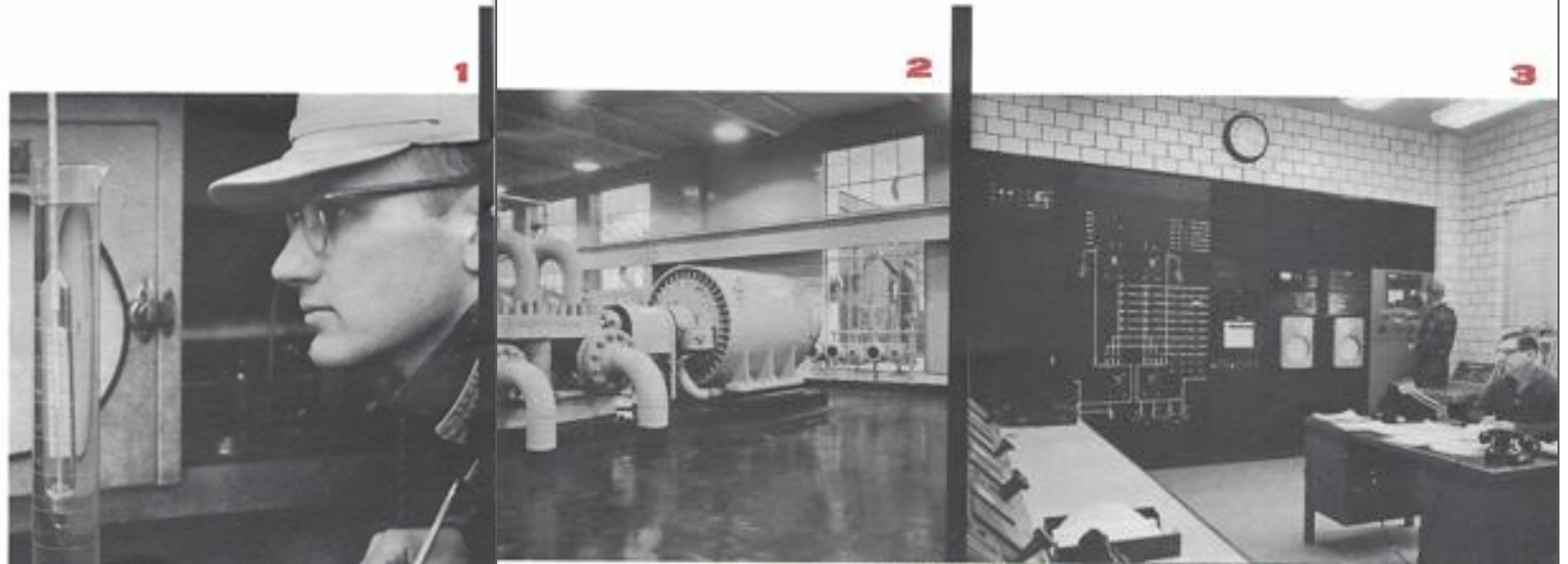


4



Before gasoline enters the pipeline proper, it is again tested for quality. **1** A gravitometer and a hydrometer both check its specific gravity. Here a hydrometer reading is taken. **2** The gasoline then comes to the heart of the station. Four of these giant pumps push it into the North and the East Lines. Another pump starts it through the St. Louis Line. Products move through these pipelines, 24 hours each day, at approximately 5 miles per hour. **3** Fingertip control of the station is maintained next door in the control room. The brains, the big instrument panels, provide instantaneous information on the status of all valves, pumps, line pressures and other operating conditions within the station. The North and East Lines are remotely regulated from Indianapolis, Ind., 250 miles away. There a central control center synchronizes the flow of products in Shell's pipelines east of the Rockies. However, the St. Louis Line is controlled from Wood River.

HEART AND BRAINS OF THE STATION



INTO THE LINE AND ON ITS WAY

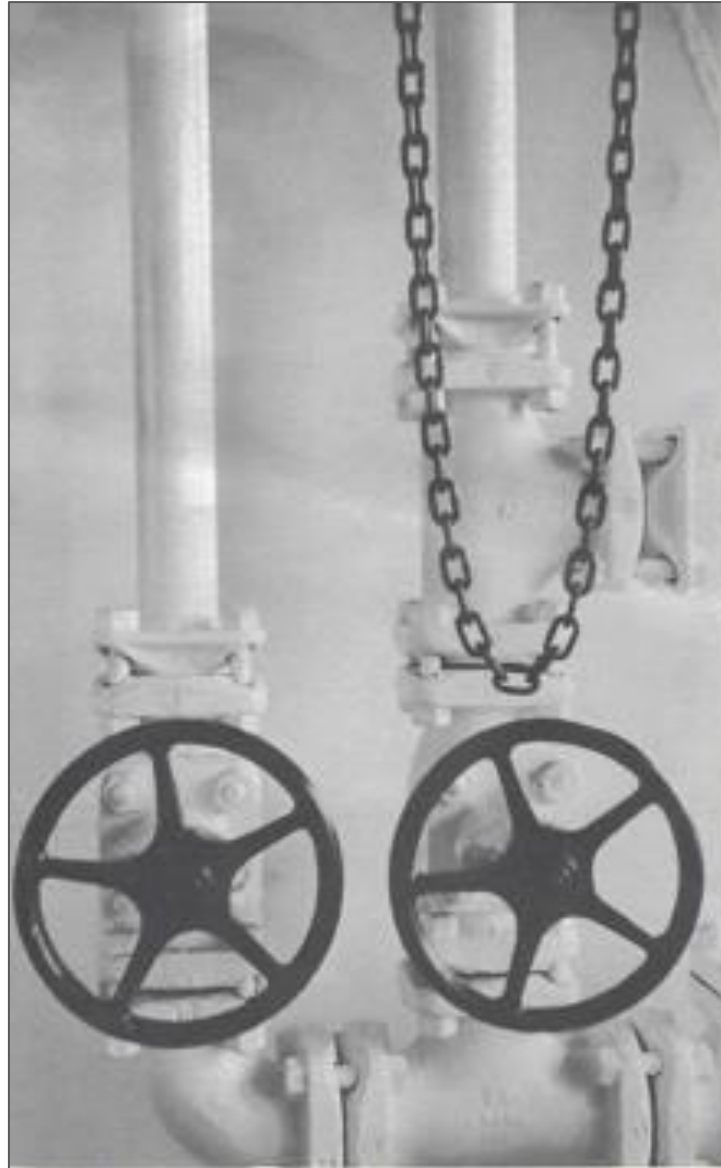
1 From the pumps, the gasoline goes into the pipeline for delivery to distant terminals. **2** A rubber ball, slightly larger than the pipe's interior, is inserted between the gasoline and the product that follows it into the line. Forced flush against the interior pipe wall, the ball moves along separating the products into liquid plugs. In this way batches of different products move along to the terminals from which they are delivered to Shell customers.



COMMUNICATIONS / MAINTENANCE

3 Efficient operation depends on maintenance. The Wood River Pump Station has its own supply of spare parts and materials and a work shop. **4** Good pipelining is largely good communications—especially multi-product pipelining. Private telephone lines and a teletype circuit keep Wood River constantly in touch with the Indianapolis Control Center and with other terminals and stations along the pipelines.





CLEANLINESS AND SAFETY

Cleanliness and safety are the station's hallmarks. Pipes, tanks and equipment are glistening white, and the station is a model of neatness. The Wood River Pump Station incorporates the latest safety devices. Abnormal operating conditions automatically shut down equipment and sound alarms. In extreme cases, windows and doors close and rooms fill with fire-smothering carbon dioxide.

SHELL OIL COMPANY