

The DISCO Smokeless Fuel Plant at Champion

By Bob Ciminel - Montour Railroad Historical Society

At the end of World War II, after merging with the Consolidation Coal Company of Maryland and divesting itself of the Montour and Youngstown & Southern railroads, the Pittsburgh Consolidation Coal Company began feeling the pinch of the drastic reduction in coal consumption as the Nation and the World settled into a period of relative peace.

When first organized as the Pittsburgh Coal Company in 1900, the company produced 17.8 million tons of coal; by 1913 it hit the 25 million ton mark. During the decade of the 1930s, production was up to 35 million tons and soared during World War II. However, after the War ended, sales dropped precipitously to a dismal 16.5 million tons. Something had to be done to “save” the coal industry in Western Pennsylvania.

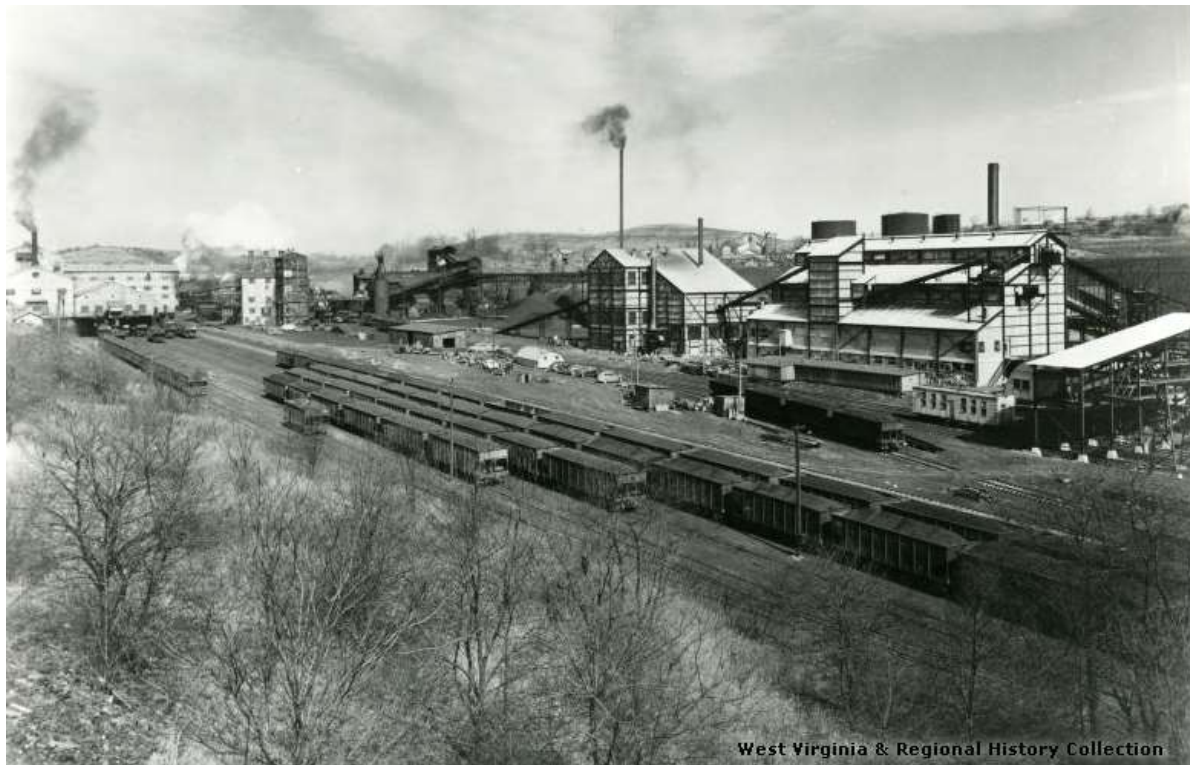
With help from the City of Pittsburgh and Allegheny County, the Coal Company found the answer.

In the late 1920s the Pittsburgh Coal Company began researching and developing a new smokeless fuel produced by low-temperature carbonization of coal. The new product was similar to coke but contained enough volatile material to produce a flame and could be used in residential furnaces and fireplaces. The coke used in the area steel mills was produced at temperatures near 3,600°F and was essentially pure carbon, which was great for producing iron but could not be used in any other applications, particularly residential furnaces and fireplaces.



The low-temperature coke the Coal Company was working on was produced at approximately 1,000°F and contained a small percentage of the volatile products in coal that made it burn, but not the ones that made it produce smoke. The Coal Company named the product DISCO, an abbreviation for “distilled coal,” and constructed a pilot plant near its Champion No. 1 coal washer (Trail Milepost 12.5) sometime between 1931 and 1933.

The DISCO process used fine coal waste, which was readily available from the Champion cleaning plant, and converted it into a conveniently sized product that could be sold through retail coal dealers. Anyone who grew up in Pittsburgh in the 1950s probably remembers the coal trucks that came into residential neighborhoods delivering coal to basements and coal cellars. One of the largest coal retailers was Champion Coal, a subsidiary of the Pittsburgh Consolidation Coal Company who owned the DISCO plant.



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DISCO was made in a five-step process. Wet coal fines from the cleaning plant were sent by conveyor belt across the Montour Railroad tracks to the DISCO plant on the east side of the coal washer. There, the coal was pre-dried and sent to roasters where it was heated to 600°F, partially oxidizing the coal to prevent it from caking and clumping together. From the roasters, the heated coal went into carbonizers, which were similar to the long rotating kilns seen in cement plants. The rotation of the carbonizers and the 1,000-degree temperature continued the coking process and formed the product into balls of DISCO.



The carbonization process also produced gases and coal tar. The gas was recycled into the DISCO plant furnaces as a fuel and the coal tar was stored in large tanks and sold to the Koppers Chemical Company, a major producer of chemicals made from coal tar. A ton of coal could produce 1,440 pounds of DISCO, 3,400 cubic feet of fuel gas, and 15 gallons of coal tar.

The original DISCO pilot plant at Champion produced about 70,000 tons of product a year, which sold for about \$17 a ton. DISCO was more expensive than low-volatile soft coal (\$13.75 per ton), a 50/50 soft coal/hard coal mix (\$15 per ton), and treated stoker coal (\$11 per ton), so it was not an affordable fuel for Pittsburgh's working classes. However, by 1946 local politics soon sent the demand for DISCO skyrocketing and the Coal Company scrambling to meet the demand.

In 1941, the City of Pittsburgh passed an all-encompassing ordinance called the Smoke Control Ordinance that required all residential furnaces and fireplaces to use smokeless fuels. It also put strict requirements on industries and the railroads, but World War II intervened and enforcement of the law was delayed until six months after the end of hostilities. The law became fully effective in 1946-47 and the rush to buy DISCO was on.

In 1948, the DISCO Company, another subsidiary of Pittsburgh Consolidation Coal Company, began building a new \$3 million facility at Champion, one that could produce 250,000 tons of DISCO a year. The new plant would have seven carbonizers rated at 800 tons per day for a combined output of over 200,000 tons per year. The carbonizers were huge, nine feet in diameter and 126 feet long, and were ready for

operation by 1949. The Coal Company announced its new plant by dropping the price of DISCO from \$17.10 to \$14.75 per ton, a 15% reduction.

The DISCO plant hummed along nicely until the 1950s when North Fayette Township began complaining about the dust the plant produced. By 1953, the township had lost patience and filed suit against the DISCO Company, but the County Smoke Control Bureau said its hands were tied because the plant was removing 93% of the fly ash and the regulations only required them to remove 85%. Fortunately, the Gulf Oil Company came up with a solution by spraying the coal with a fine mist of light oil. The dust problem was solved and the plant operated into the 1960s. With the DISCO plant consuming over 400,000 tons of coal a year, the Montour Railroad was kept busy hauling coal from the mines to the plant and moving DISCO from the plant to both industry and consumers.

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