

industry and the demand for gas to grow at an increasing pace in Europe," he said. "We expect many innovations and advances in gas technology to come from the laboratories of the Gas Council and Gaz de France which will be made available to AGA. They too will gain by drawing on the bank of technical knowledge we are continuing to develop in the United States."

English view. The Gas Council in its research on domestic gas appliances has put great emphasis on quietness and stability, Dr. Hebden said.

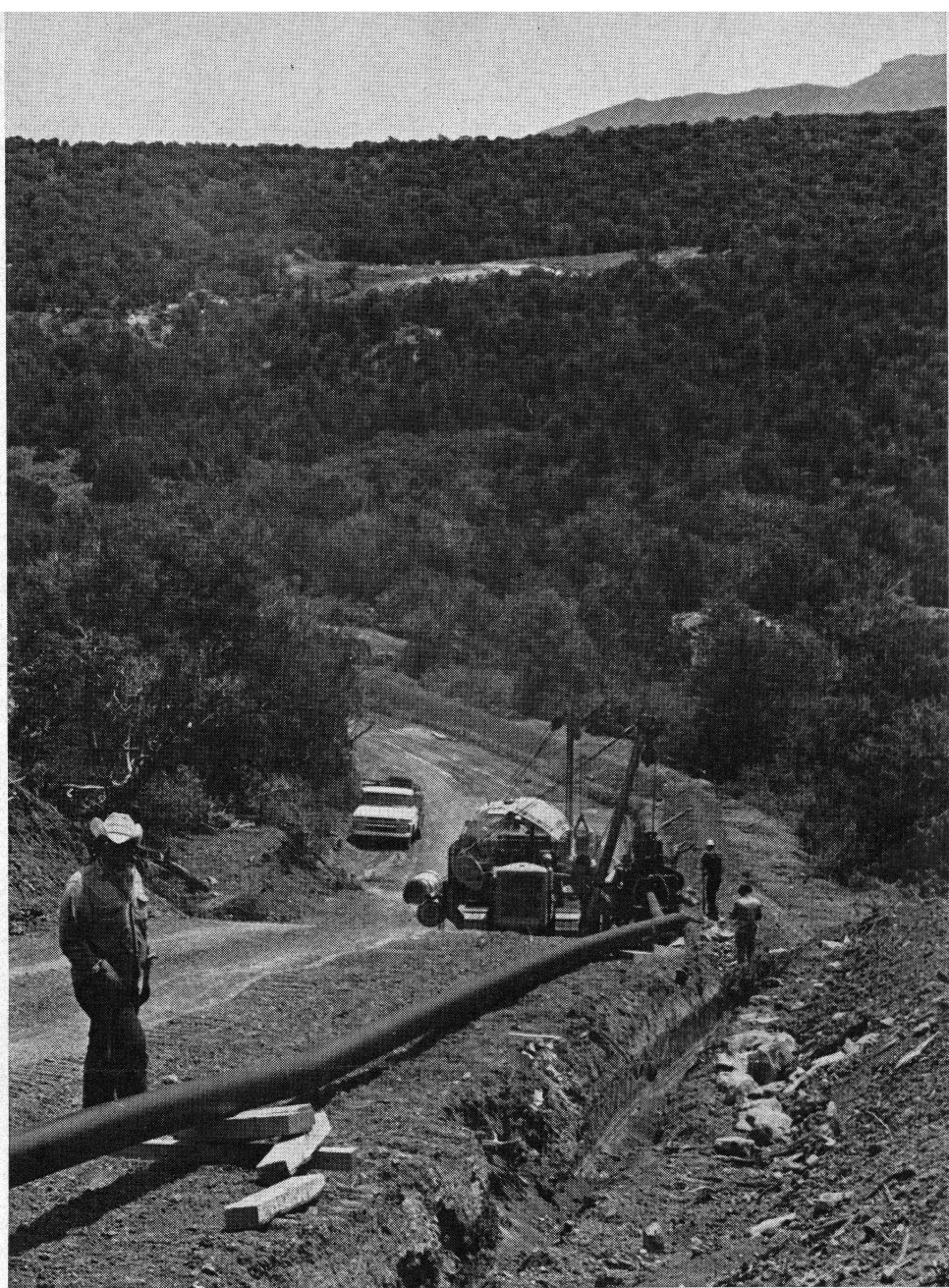
"Research of special interest is now being done on aerodynamics and noise," he added. "In the field of industrial utilization, the Gas Council has had a great deal of success with tunnel burners and oxy-gas burners and has recently done pioneer work on standards for automatic gas burners and on safety shut-off valves. Good progress has been made with the application of model techniques to furnace design."

The Gas Council now faces special problems of converting to natural gas following gas discoveries in the North Sea. It hopes to benefit from valuable experience of Gaz de France and AGA on the problems of transmission and distribution of gas on a large scale.

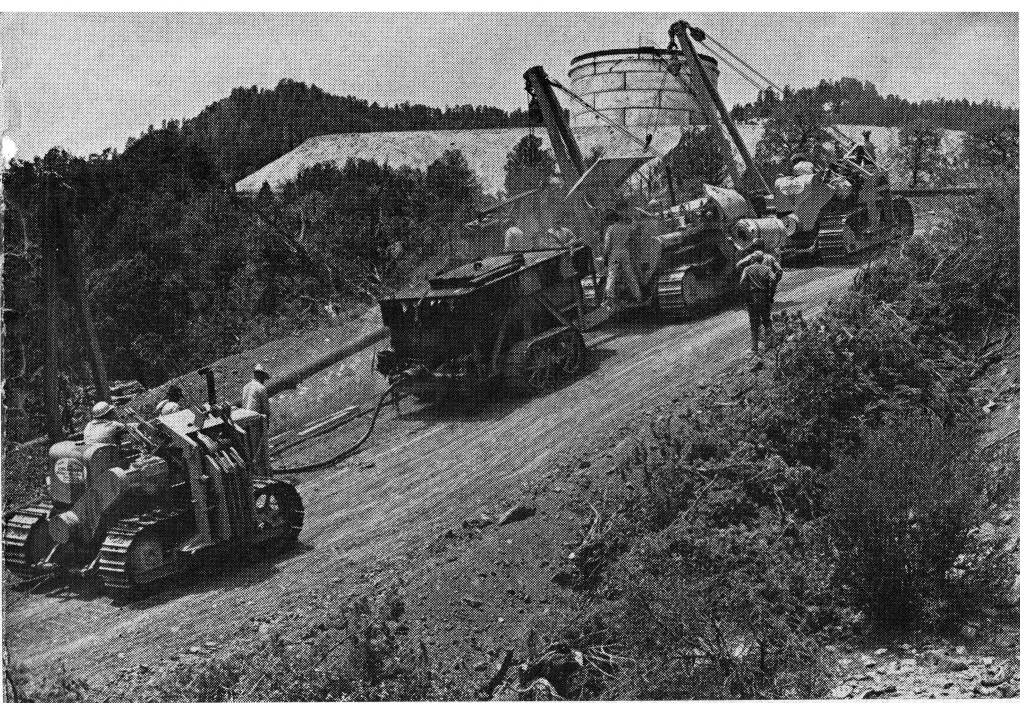
French activity. Gaz de France's marketing plans call for four out of five consumers in that country using natural gas by 1975. The current ratio is three out of five.

This market saturation will be possible, M. Lecoœur said, only with the successful conclusion of several research projects now under way. He listed the projects as: production of gas substitutes equivalent to natural gas; developments in liquefaction and transport of LNG; new storage techniques; new methods and materials for building distribution systems; and development of new appliances and applications.

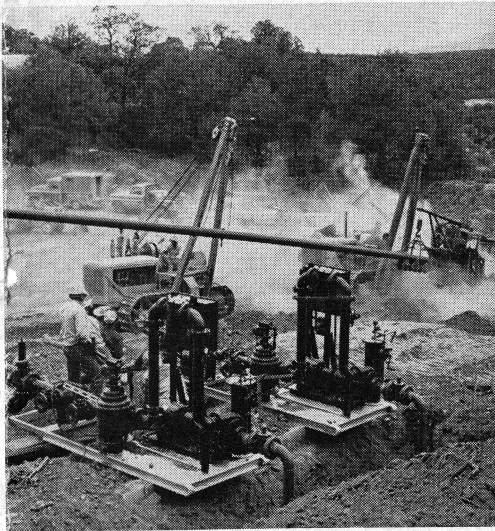
Rutherford, meanwhile, noted that France and Britain both may well be interested in several major research projects of AGA. These include development of complete climate control for high-rise buildings, electricity from heat of gas combustion and various appliance improvements.



PIPE is laid through rugged terrain from Kermac's Dineh bi Keyah field.



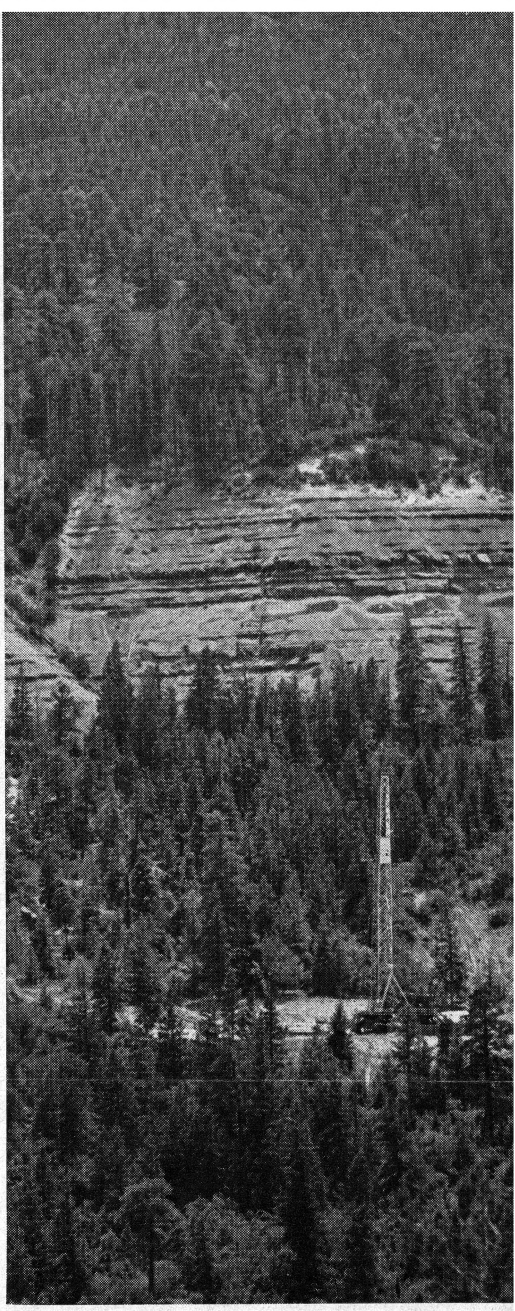
COATING machine receives a pull from a tractor as it moves up a hill.



FINAL joint of line is laid.



STORAGE tanks ready to receive crude.



KERMAC'S 4 Navajo is logging.

Kerr-McGee's Arizona field

KERR-McGEE Corp. has tied its 5-month-old Dineh bi Keyah field in northeastern Arizona into the Four Corners pipeline.

Cumulative production figures for the field through July 12 were also released by Kermac, along with well and reservoir data.

Kermac said initial production into its 33-mile 8-in. line from Dineh bi Keyah to the Four Corners line is expected to be around 14,000 b/d. Line capacity is 20,000 b/d by gravity flow, but it may be increased to 40,000 b/d by installing pump stations.

Kermac's line connects to the Four Corners line about 12 miles southeast of Shiprock, N.M. Previously, Dineh bi Keyah oil was trucked 39 miles to Shiprock. A 30,000-bbl storage tank has also been erected at the field.

How field produces. Dineh bi Keyah production amounted to 857,886 bbl through July 12. Production in June alone amounted to 264,203 bbl. Kermac has completed seven oil wells in the Apache County field, is completing two others, and is drilling at two additional

tied into Four Corners line; output soars

locations. The seven wells are capable of producing from 200 to 2,000 b/d each.

Kermac completed the Dineh bi Keyah discovery well in February, pumping 650 b/d. Field is located on the Lukachukai anticline in the Chuska Mountains, about 50 miles southwest of Farmington. The confirmation well—completed in March pumping 2,856 b/d—has produced 323,975 bbl to date, Kermac said.

Pay is a unique Miocene igneous sill that has intruded limestone and shales of Pennsylvanian age (OGJ, Apr. 3, p. 123). Producing zone

ranges from 60 to 134 ft thick, and is found at depths from 2,800 to 3,800 ft, Kermac said. Field is on 160-acre spacing.

Also in Dineh bi Keyah field, Kerr-McGee has completed a helium gas well and tested helium in another well. Helium was found in a formation 500 ft below the oil-producing igneous sill. Additional drilling is planned. Kerr-McGee owns a plant at Navajo, Ariz.—100 miles south of the field—which produces 99.995% pure gaseous helium.

Nearest oil production to Dineh bi Keyah lies 15 miles east in New

Mexico's Tocito field. Giant Aneth field, largest in the Four Corners, is about 60 miles northwest in Utah's Paradox basin.

In the Dineh bi Keyah play, Humble Oil & Refining Co. has one producing well, one dry hole, one location, and two holes temporarily abandoned.

Humble has also confirmed that it has found helium in possibly commercial amounts on the edges of the Apache County field. Dineh bi Keyah is in the midst of the biggest helium producing region in the U.S.