During 1981, Newmont and its subsidiaries throughout the world spent approximately $25.7 million on minerals exploration, research and engineering, compared with $23.6 million in 1980. Emphasis continues on searches for precious metals, other high-value minerals and high-grade nonferrous metal deposits.

Exploration

While Newmont's principal areas of exploration interest continue to be the United States, Canada, Australia and South Africa, the Corporation is increasingly active in other countries. During 1981, a wholly owned subsidiary entered into a joint venture with a Spanish mining company which has bid for exploration rights on certain Spanish government lands in the pyrite belt of the Province of Huelva. Newmont's proprietary geophysical technology will be used to explore these properties. Similar joint-venture opportunities are also sought in Chile, and preliminary investigations in other countries are under way.

Newmont's gold exploration program in the western United States during 1981 dramatically expanded reserves at three deposits whose discovery had been announced a year ago. In Nevada, the Gold Quarry deposit, some 12 miles south of Newmont's Carlin mill (see page 14), is now credited with geologic reserves containing approximately 8 million ounces of gold, and the Rain deposit, 20 miles farther south, has another 700,000 ounces. The Cargo Muchacho deposit, located in southeastern California, contains reserves with a further 300,000 ounces of gold. Drilling to locate possible additional reserves and develop data for mine planning is continuing, and metallurgical tests and engineering analyses are in progress.

Elsewhere in the United States, exploration programs for gold and base metals continued in several Western states, in the Carolinas, the Northeastern states and in the Midcontinent region.

In Canada, as in the United States, exploration is heavily concentrated on the search for gold and higher value deposits. A comprehensive underground drifting and diamond drilling program at the Trout Lake, British Columbia, molybdenum prospect managed by Newmont was completed during 1981. Results of this program are currently under review. However, current conditions in the molybdenum markets dictate postponement of development.

Newmont Holdings Pty. Ltd. (see page 16) manages Newmont's exploration programs in Australia, the majority of which are joint ventures with Australian partners. They continue to be directed toward gold, tin and other base metals.

In South Africa, exploration activities managed by Newmont South Africa Limited are confined to diamonds and gold. The diamond prospect in the Western Transvaal, reported last year, was sufficiently encouraging to justify a program of drilling large-diameter holes, taking bulk samples and testing these samples in a small pilot plant. This work will continue in 1982.

Research

Newmont Exploration Limited's Metallurgy Department in Danbury, Connecticut, supports Newmont's worldwide operations through technical assistance, testing and research. During 1981, the Department's major activities centered on Newmont's gold deposits. Cyanidation tests on ores from the Gold Quarry and Rain deposits in Nevada and Cargo Muchacho in California were carried out to provide design data for a new conventional cyanide plant in Nevada, as well as heap leaching facilities for lower grade ores.

The Metallurgical Department participated in extensive research to evaluate the feasibility of scrubbing reverberatory furnace gases from the Magma copper smelter in Arizona with a slurry of fine flotation tailings. This technique is one of several alternative methods being considered to meet state and federal anti-pollution regulations.

Engineering

The engineering group provides preliminary evaluations and engineering support for Newmont's worldwide activities. During 1981, it supervised completion of the Maggie Creek heap leaching facility which went into operation in April. It also supervised construction of Atlantic Cement's slag cement facility in Maryland and assisted in completion of preliminary engineering and cost estimates for Foote Mineral Company's Chilean lithium venture. The group also has done preliminary engineering and evaluation of various alternative modifications to meet pollution control requirements at Magma's smelter at San Manuel, Arizona.

Left: Newmont staff members with responsibilities for exploration, engineering, research and development include, from the left, (seated) Richard D. Ellett, Vice President, Exploration; Carmen F. Fimiani, Project Development; Aubrey L. Paverd, Manager of Foreign Exploration; Leonard Harris, Vice President, Research and Development; (standing) Peter J. Crescenzo, Vice President, Engineering; and Robert R. Beebe, Vice President, Project Development.

Left: Charles G. Freeman, Assistant to the Vice President, Exploration; and William M. Walsh, Manager of Accounting, in the map room at Newmont headquarters.