

it an attractive geothermal prospect. To get some idea of just how hot, and extensive, the potential reservoir was, it took a good deal of shallow drilling and geochemical and geophysical studies. It also took four lives.

This is rugged country. Until the geothermal explorers arrived, only a few hot spring aficionados, trappers, and prospectors knew it at all well. Grizzlies hunted in the dense forest of fir, cedar, and hemlock which climbs the mountain slopes (or did so until the loggers arrived). The harsh experiences of some of the mountain's earliest visitors are recorded in the names that grace its glaciers and creeks: Affliction, No Good, Devastation.

In 1974, four men were cutting lines through the bush in preparation for a resistivity survey. They had finished their day's work and were waiting by Meager Creek — probably with their boots off, cooling their feet — for the helicopter which was to take them home. High above them, a chunk of ice and snow broke free from Devastation glacier. As it fell, it loosened more material; a gathering pile of rock and dirt, bounding from one valley wall to the other, came ripping down the creek. It must have been travelling at 150 km/h when it struck the line cutters. When the helicopter pilot flew over, shortly afterwards, he could find not a trace of the crew, or even of the rendezvous point; all had been buried by the avalanche.

The exploration of Mount Meager continued. As the results grew more encouraging, B.C. Hydro, the prospective operator of a geothermal power plant here, gradually took over responsibility from the federal government. In the utility's Vancouver headquarters, project engineer Joe Stauder described to me what explorers think lies under the mountain. "Very likely," he said, "there is a chamber of cooling lava 10 km or so below the surface. This heats the surrounding rock, and in turn, the subsurface water. The heated water," he continued, "rises, cools, and falls again, circulating through hair-fine cracks. As it cools, it precipitates silica, clogging the rock fractures, and thus sealing the underground chamber. The lid is now on the pressure cooker, and within it, water becomes superheated."

The only way to really know what lies underground, of course, is to drill. During the summer of 1980, a B.C. Hydro crew encountered temperatures of over 200°C at a depth of only 367 m, using a light, exploratory drill rig; the rock cores they brought up showed chemical signs of being the silica-clogged lid capping a geothermal reservoir. On the basis of this and similar results, B.C. Hydro launched the next phase of development, a \$2 million deep-drilling and testing

The world's longest-operating geothermal power station, begun in 1904, is in Larderello, Italy.

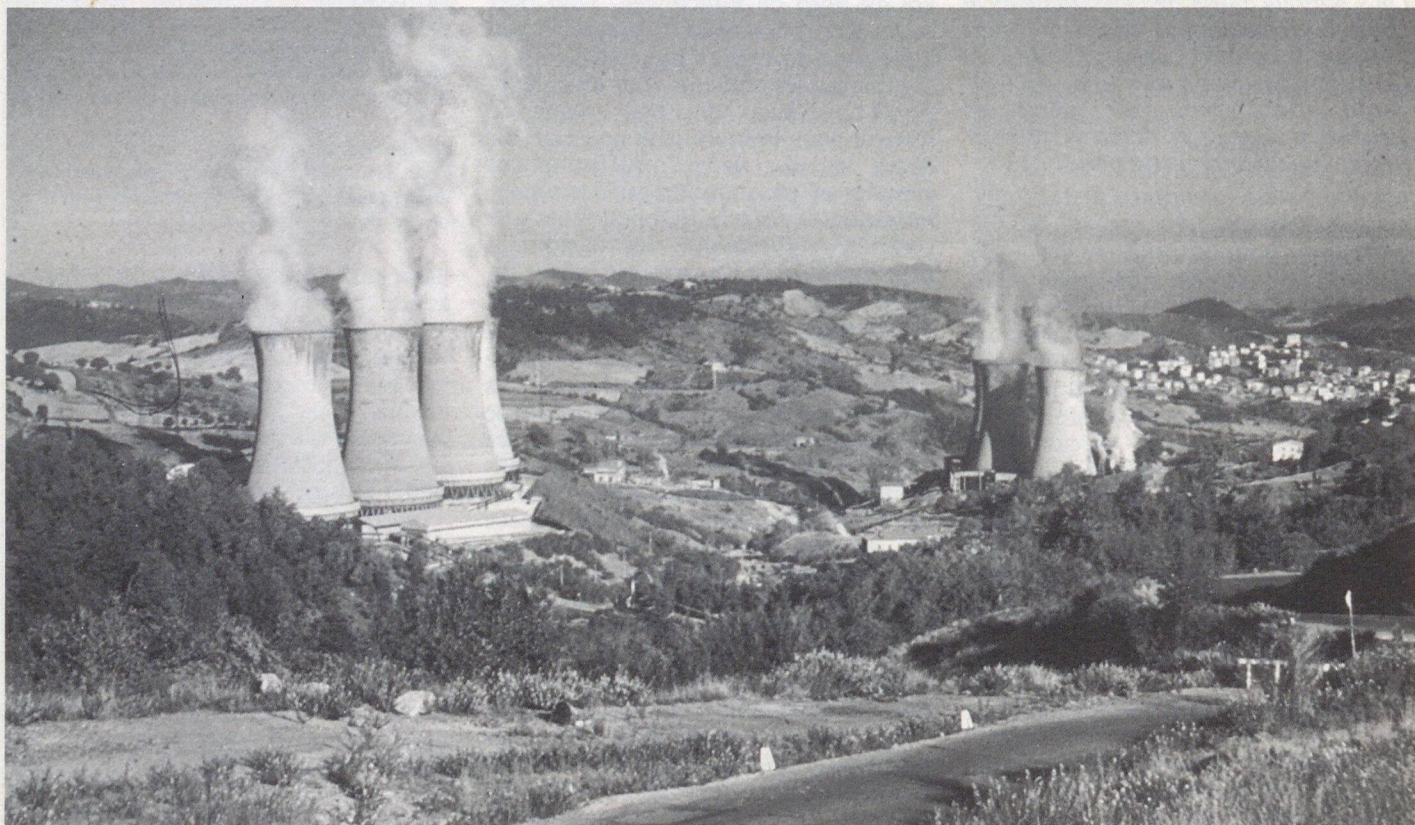
program. Late in June of 1981, a convoy of 60 trucks arrived at Mount Meager from Alberta, and a crew of 20 roughnecks erected a full-size oil-drilling rig. Gordon Boyd, B.C. Hydro site manager, was there to meet them.

Boyd, a lean and friendly Scot, also met me. He explained what everybody in the 50-person camp he supervises did: when the weather permits, seismic crews fly to the top of the mountain; drillers puncture its perimeter with their light rigs; geologists map the area. "The most interesting part," said Boyd in his trailer/office, "is the drilling. Would you like to see the rig?" I would.

It looked like a giant erector set, surrounded by neat piles of the paraphernalia drillers use: pipes, drill bits, sawdust, even sacks of walnut shells. Above the steaming rig, a thin, white thread of water — Angel Creek — tumbled off the mountain. Its waters are pumped down the hole to cool the rock-chewing, diamond-studded bit; they rise again, dishwater warm, laden with rock chips which are separated on a vibrating table and bagged for analysis by the geologists.

According to a TV monitor in the control room, the hole was 1400 m deep; it would take another month or so to reach its planned 3000 m. It was angled to point towards the mountain.

La plus ancienne station géothermique du monde est celle de Larderello, en Italie, qui a été mise en service en 1904.



(Alan Jessop)