



Right on schedule for its planned commercial operation in October 1988, the Ohaaki geothermal power station between Rotorua and Taupo won't come onstream with a hiss and a roar like its counterpart at nearby Wairakei.

But although the most modern methods of steam reinjection will largely dispense with the familiar steam clouds of Wairakei, the station will still be a spectacular sight because of the massive 105 metres of cooling tower that will be an integral part of the operation.

The first stage of the Ohaaki development will add about 100 megawatts to the national grid, with 50 megawatts becoming available after October 1988 and another 50 MW after March 1989.

Should it be considered feasible, plans also allow for a possible second stage development, lifting total output to 150 megawatts. However, there is no commitment to this yet.

There is a long history behind Ohaaki.

It is the first power station to be built on land with Maori ownership — the Ngati Tahu people. Their small Ohaaki marae, consisting of a meeting house and dining hall, stands adjacent to the project.

Steam investigations and other testing started in the Broadlands field 20 years ago and final Government approval to proceed with the construction of the

power station came in 1982, following agreement with the owners on a lease for the land required on the west side of the Waikato River.

The field is now tapped by 45 wells, about half of which will be used to draw off steam for the Ohaaki project. Wells measure between 1000 metres and 1800 metres deep.

One of the problems with New Zealand's geothermal fields is the toxicity of the separated water, containing poisonous elements including arsenic and boron. Pumped into fresh water they can cause pollution.

At Ohaaki this problem will be overcome by reinjection. It is also expected to reduce ground instability and prolong the life of the field.

Reinjection is used both in Japan and the Philippines but has only previously been tried on an experimental basis in New Zealand.

The plant will consist of two intermediate pressure turbo generators and two smaller high pressure turbo generators which were formerly used in the Wairakei field before failing steam pressure there made their use unecon-



DSIR scientists check and record fluid flows at Wairakei in 1971. Flows are regularly monitored to check the performance of the field.

omic.

Refurbished, they will go back into duty at Ohaaki as an integral part of the power station, although separate turbine houses are being built for the two sets of generators.