



4 Manapouri Power Station

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Environmental Report

South Island Interim Development Group
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4.1 Introduction

This section sets out matters relating to the operation of Manapouri Power Station. It describes the existing consents, the current environmental issues at the station, and the potential effects following the separation of SISOE. It sets out other consent matters, in particular, those relating to the development of the second Manapouri tailrace tunnel ("2MTT").

In summary, resource consents for the Manapouri Power Station were recently obtained and all issues appear to have been successfully dealt with in consultation and by way of conditions. A number of agreements and trusts cover other issues of specific concerns to individual organisations.

Manapouri Power Station has consents to discharge only up to 510 cumecs. If SISOE wished to obtain consents for a larger discharge, detailed environmental assessments and consultation would be required.

4.2 Status of Consents, Conditions and Agreements

Manapouri Power Station was authorised by an Act of Parliament (Manapouri and Te Anau Development Act 1963, known as "**MTADA**"). An Operating Guideline Notice was notified in the New Zealand Gazette in 1993 (referred to as the "**Gazetted Guidelines**").

In 1996 the Manapouri Power Station was granted six resource consents under the RMA, subject to conditions. The consents have a 35-year term and do not expire until 2031. The consents carry conditions requiring compliance with the Gazetted Guidelines.

The Gazetted Guidelines are aimed at protecting the "*natural patterns, ecological stability and recreational values of the vulnerable shorelines*" of Lake Te Anau and Lake Manapouri. They set out a main operating range for Lake Manapouri of 176.8 m to 178.6 m and for Lake Te Anau of 201.5 m to 202.7 m. Low and high ranges are also set out which permit these levels to be exceeded or moved below over specified durations, with minimum intervals between exceedances, and with a specified ratio. Together these ranges are intended to provide a "natural" range for the levels in both lakes.

Consultation in relation to the consent applications was exceptionally thorough, and involved 22 organisations, including regulatory agencies, Ngāi Tahu, the Guardians of Lakes Manapouri and Te Anau, the Department of Conservation and a variety of organisations representing recreational, industry, community and tourism interests. These parties constituted the Waiau Working Party. This Group agreed a variety of monitoring and other conditions that formed an integral part of their joint submission to the Southland Regional Council in respect of the resource consent applications.

The consents cover activities relating to the following structures or locations and are summarised below.

1. **Manapouri Te Anau Control Structure** - A coastal permit to discharge to Deep Cove, Doubtful Sound.
2. **Lake Te Anau Control Structure** - A water permit to dam and divert the waters of Lake Te Anau.
3. **"Upper" Waiau River** - A discharge permit to discharge water from the Lake Te Anau Control Structure to the Waiau River.
4. **Manapouri Lake Control Structure and Mararoa River** - Water permits to dam and divert the waters of Lake

Manapouri and the Waiau and Mararoa Rivers, and to divert Mararoa River to a diversion channel.

5. **"Lower" Waiau River** - A discharge permit to discharge the waters of Lake Manapouri and to Waiau and Mararoa Rivers, and to the bed of the Waiau River.
6. **Manapouri Power Station** - A water permit to take and use the waters at Lake Manapouri through intake gates at the Manapouri Power Station.

The consents provide for seven yearly statutory reviews, based on monitoring results.

4.2.1 Agreements

1. Between ECNZ and Southland District Council

This agreement covers funding by ECNZ of five small amenity projects and costs for obtaining resource consents for these. The projects include construction of boat ramp and public toilet facilities, the upgrading of Tuatapere water supply and the reconstruction of Pearl Harbour retaining wall.

2. Between ECNZ and Te Runanga O Ngai Tahu

ECNZ provided funding to Te Waiau Mahika Kai Trust in recognition of the effects of Manapouri Power Station. The Trust has a variety of cultural and scientific purposes relating to habitat protection, creation and enhancement and the enhancement of native fauna and flora.

3. Between ECNZ and Trustees of the Tuatapere Amenities Trust

ECNZ provided funding to the Tuatapere Amenities Trust to mitigate the effects of the Manapouri Power Station on the inhabitants of Tuatapere Community.

4. Between ECNZ and Trustees of the Te Waiau Fisheries and Wildlife Habitat Enhancement Trust

ECNZ provided this Trust with funding to be expended on projects in the Waiau River catchment with the aim of enhancing freshwater fish and wildlife habitat.

4.3 Adequacy of the Existing Resource Consents

In respect of the existing resource consents for the Manapouri Power Station, the evaluation finds as follows:

- All necessary discharge permits and water permits have been obtained from the Southland Regional Council in respect of the Manapouri Power Station, except the resource consents which would be required if the second Manapouri tailrace tunnel were to be operated at its full capacity.
- The structures on the beds of lakes and rivers of the Manapouri Power Station rely on the transitional provisions of the Resource Management Act 1991 ("RMA") [s418 *Certain existing permitted uses may continue*]. Section 418 states that a resource consent for a structure on the bed of lakes and rivers is not required for any activity lawfully being carried out, until a Regional Plan provides otherwise.

It is likely that once the relevant Regional Plan becomes operative, ECNZ will not be able to rely on s418 of the RMA. As such, land use consents under s13 will be required from the Southland Regional Council for all structures located on the beds of lakes and rivers (e.g. dams). It is therefore important that SISOE is involved in the statutory planning process, including consultation and making submissions on draft and proposed plans to the Southland Regional Council.

- Irrespective of the zoning or other provisions of the relevant district planning documents, the continued operation of the Manapouri Power Station is authorised by the provisions of s10 "Certain existing uses in relation to land protected" of the RMA, provided that the activity is not discontinued and that the effects of the use are the same or similar in character, intensity and scale to those that existed before the rule became operative or the proposed plan was notified. This is likely to be the case for the Manapouri Power Station.

Therefore, the only district planning issues relate to s16 *Duty to avoid unreasonable noise* and s17 *Duty to avoid, remedy or mitigate adverse effects*. Realistically, given the longstanding nature of the activities at the Manapouri Power Station the only potential issue would relate to noise. In this regard, a noise survey was undertaken in March 1996 by Malcolm Hunt Associates which concluded that compliance with the relevant District Plan provisions and NZ Standard (NZS6802:1991) has been confirmed.

4.4 Existing Environmental Effects

Most environmental concerns relating to Manapouri Power Station were dealt with in the 1996 consents round.

There are no erosion issues around the Lake Te Anau and Lake Manapouri shorelines as these lakes operate within their natural ranges.

At Lake Manapouri, there are erosion issues at Pearl Harbour. An old retaining wall has been removed and will be replaced. This appears to be in hand.

There are some concerns regarding effects of the Waiau River levels on marine fauna near the mouth of the Waiau River. This is in relation to the effects of natural suspended sediments on shellfish beds. The concern is that the controls in place on the Waiau River have lowered the concentration of natural solids. This may be raised at future reviews.

A study of the changes to the natural character of the lower Waiau is being carried out by consultants Boffa Miskell.

The Mararoa Weir has been constructed such that the gate sill level constrains the operating range of Lake Manapouri above the minimum authorised by the resource consents. An investigation of the costs and benefits to SISOE of altering the spill level is needed.

Compliance with resource consents appears to be exemplary. ECNZ has indicated it will not have installed all the required fish passes within the timeframe specified in the consent. This matter has been raised by ECNZ with the Southland Regional Council and stakeholders. ECNZ has advised that there are no significant concerns about the failure to meet this deadline.

4.5 Relationship with Regulatory Authorities

As part of this review, a meeting was held with management staff of Southland Regional Council. This meeting indicated that: ECNZ was held in very high regard; the existing consents were appropriate for the long term; the level of compliance was excellent; and any outstanding issues were minor and of no particular significance.

4.6 Potential Environmental Effects After SISOE Split

The two lakes naturally fill and empty very rapidly and the resource consents stipulate prescriptive ramping rates that mimic the natural situation closely. They go as far as specifying the maximum number of specific events within specific timeframes.

For this reason no adverse environmental effects are expected as a result of the separation of SISOE from ECNZ.

4.7 Other Consent Issues

A key matter in relation to future resource consents is the consent constraining the discharge from the second Manapouri tailrace tunnel. This is summarised below.

4.7.1 Second Tailrace Tunnel

The resource consents obtained for the Manapouri Power Station in 1996 set a maximum discharge to Deep Cove of 510 cumecs.

Currently the station is unable to discharge at 510 cumecs because of friction losses within the station and the significant risk of station flooding. The station discharges a maximum of around 460 cumecs for this reason. A second Manapouri tailrace tunnel (2MTT) is currently being constructed to improve the efficiency of the power station. This is being carried out under the provisions of MTADA, which effectively authorises the activities until 1 October 2001. The new tailrace tunnel will theoretically enable the station to discharge up to around 630 cumecs.

Consents to increase the discharge on completion of 2MTT were not sought in the 1996 applications.

A programme to monitor the effects of the discharge into Deep Cove has been initiated, as required by the resource consents. The initial monitoring will be looking at an environment that has stabilised over the last 25 years under the 460-cumec maximum discharge regime. Monitoring may identify changes that result from 2MTT coming on line and increasing the discharge to 510 cumecs. However, it must be noted that in the context of natural flood flows to Deep Cove of around 5,000 - 6,000 cumecs, the increase in the discharge from 2MTT are very small.

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