This entire chapter has been notified using the RMA Part One, Schedule 1 process (**P1 Sch1**).

Text shown in **red** (both underlined and ~~struck out~~) represents all changes recommended by the Panel from the notified Plan provisions.

TPR – Transpower New Zealand Limited

Transpower New Zealand Limited

Central Park Substation	
Designation unique identifier	TPR1
Designation purpose	Electricity Substation
Site identifier	Lot 10 DP10508 & Sections 1 & 2 SO25047, CT38A/542 Brooklyn Road, Nairn Street
Lapse date	Given effect to
Designation hierarchy under section 177 of the Resource Management Act	Primary
Conditions	No
Additional information	Rollover designation, formerly designation F1
Wilton Substation	
Designation unique identifier	TPR2
Designation purpose	Electricity Substation
Site identifier	Pt Section 1 SO35925 and Section 1 and Section 2 SO37972, WN56C/502 Off Chartwell Drive
Lapse date	Give effect to
Designation hierarchy under section 177 of the Resource Management Act	Primary
Conditions	Yes, see Conditions 1
Additional information	Rollover designation, formerly designation F2. Rollover Conditions, Conditions 1 formerly Appendix J
Takapu Road Substation	
Designation unique identifier	TPR3
Designation purpose	Electricity Substation
Site identifier	Section 41 Takapu District & Lot 1 DP66905, CT41A/665 & CT38A/541 Takapu Road
Lapse date	Given effect to
Designation hierarchy under section 177 of the Resource Management Act	Primary

Conditions	No
Additional information	Rollover designation, formerly designation F4
Oteranga Bay Terminal Station	
Designation unique identifier	TPR4
Designation purpose	Terminal Station
Site identifier	Section 97 Terawhiti District CT36D/931; Section 1 SO26301 CT33B/962, Crown Land Survey Office Plan 26301 (Marginal Strip) Oteranga Bay
Lapse date	Given effect to
Designation hierarchy under section 177 of the Resource Management Act	Primary
Conditions	No
Additional information	Rollover designation, formerly designation F6
Te Hikowhenua Shore Electrode Station	
Designation unique identifier	TPR5
Designation purpose	Shore Electrode Station
Site identifier	Sections 1 & 2 SO26857, CT 35B/502 (Wellington Registry), Pt Sec 99 Ohairu WN37D/566, Lot 2 DP 68058 CT 41B/978 Makara Coast
Lapse date	Given effect to
Designation hierarchy under section 177 of the Resource Management Act	Primary
Conditions	No
Additional information	Rollover designation, formerly designation F5
Kaiwharawhara Supply Point Substation	
Designation unique identifier	TPR6
Designation purpose	Electricity Substation
Site identifier	Section 169 Harbour District, CT 32C/248, Section 1 SO 33125 CT 36A/287 135 Hutt Road
Lapse date	Given effect to
Designation hierarchy under section 177 of the Resource Management Act	Primary
Conditions	Yes
Additional information	Rollover designation, formerly designation F7

Designation conditions:

110kV Substation

Conditions 1: Transpower New Zealand Limited (Wilton Substation) Conditions

Noise

1. Following the implementation of noise control measures at the Wilton Substation, the level of transformer noise measured at the substation site boundary between 7am and 10pm daily, where a residential property abuts that boundary, shall not exceed 45 dB(A) (L95). At all other times, the level of transformer noise shall not exceed 40 dB (A) (L95).

    a. That if noise measurements are to be performed they shall be performed at times and/or under conditions which ensure that wind noise in the trees surrounding the site, as well as distant traffic noise or extraneous corona discharge noise emission (across high voltage insulators), is not permitted to elevate the measured L95 background noise level.

    b. If measurements are required under unusual conditions as would occur in the presence of other sources of extraneous noise, then acceptable alternative assessment procedure must be adopted. The preferred alternative assessment procedure shall then be based on the use of a narrow band FFT analysis system to measure the relevant harmonic components.

    The FFT analyser which is used must have appropriate selectivity (a normal 3Hz bandwidth), and an appropriate dynamic range (80dB). The instrument must have current Telarc (International Accreditation New Zealand) calibration certification. The FFT system shall then be used to measure the 100Hz, 200Hz and 300Hz harmonic noise emission components generated by the Wilton Substation's transformers. The harmonic components and levels resulting from such measurements shall be A-weighted and logarithmically summed to provide the appropriate A-weighted noise emission. This alternative measurement procedure would only be required to ensure appropriate discrimination between transformer noise emission components in the presence of significant noise emission from broadband sources of noise which do not feature harmonic components of that type.

2. Following the implementation of noise control measures at the Wilton Substation, the level of transformer noise between 7am and 10pm daily, at the nearest facade of a residence when corrected for façade reflections (or at an equivalent position which is not subject to facade reflection), shall not exceed 40 dB (A) (L95). At all other times, the transformer noise shall not exceed 35dB (A) L95.

    a. That if noise measurements are to be performed they shall be performed at times and/or under conditions which ensure that wind noise in the trees surrounding the site, as well as distant traffic noise or extraneous corona discharge noise emission (across high voltage insulators), is not permitted to elevate the measured L95 background noise level.

    b. If measurements are required under unusual conditions as would occur in the presence of other sources of extraneous noise, then acceptable alternative assessment procedure must be adopted. The preferred alternative assessment procedure shall then be based on the use of a narrow band FFT analysis system to measure the relevant harmonic components.

    The FFT analyser which is used must have appropriate selectivity (a normal 3Hz bandwidth), and an appropriate dynamic range 80dB). The instrument must have current Telarc (International Accreditation New Zealand) calibration certification. The FFT system shall then be used to measure the 100Hz, 200Hz and 300Hz harmonic noise emission components generated by the Wilton Substation's transformers. The harmonic components and levels resulting from such measurements shall be A-weighted and logarithmically summed to provide the appropriate A-weighted noise emission. This alternative measurement procedure would only be required to ensure appropriate discrimination between transformer noise emission components in the presence of significant noise emission from broadband sources of noise which do not feature harmonic components of that type.

3. All measurements shall be carried out in general accordance NZS 6801 (Measurement of Sound) and assessed with NZS 6802:1991 (Assessment of Environmental Sound) subject to the following qualifications:

    a. The measurement methodology and any subsequent assessment of the acceptability of transformer noise emission shall be based on the adoption of the L95(A) weighted statistical parameter (in lieu of the L10 parameter that is the assessment descriptor currently nominated in NZS 6802:1991) and any assessment procedures shall be applied to the L95 limits, except that section 4.4 “Adjustments to Performance Standards” of NZS 6802:1991 shall not be applied to any such assessment procedures.

    b. If noise emission measurements are to be performed in the vicinity of or at the Wilton Substation with the aim of confirming requirements of conditions 1, 2 and 3, then the acoustical consultant’s environmental engineers shall:

        i. Install a portable meteorological system at the edge of the Wilton Substation escarpment in an unshielded position that ensures the objectivity of the data collected.

        ii. The meteorological system shall record peak wind velocity and direction with maximum integrating periods of 10 seconds.

        iii. The data collected by the meteorological recording system during the course of the measurements shall be presented in either graphical or tabular form as an appendix to the report.

        iv. The traceability of the measurements recorded by the meteorological system shall be either to New Zealand National Standards or to a comparable National or International Standard.

    c. The noise monitoring equipment utilised shall be reference level checked before, during and after each series of measurements. The equipment shall have been subject to external calibration within the previous 12 months to confirm its compliance with the New Zealand National Standards or, failing that, with the IEC and /or ISO Standards relating to precision sound level meters and statistical analysers, and their use.

4. The noise control measures referred to in conditions 1 to 3 above, shall be implemented prior to 1 January 1999, or such date as agreed in writing with Council.

5. Within three months of the implementation of the noise control measures referred to in conditions 1 to 4, Transpower shall provide Council with a monitoring report detailing whether compliance is being achieved. If this is not being achieved the report shall also detail remedial measures to urgently achieve compliance.

<u>Electromagnetic Field</u>

6. The electromagnetic field exposure at or beyond the secure boundary of the substation site shall not exceed the International Commission on Non-Ionising Radiation Protection Guidelines, for limiting exposure to time-varying electric and magnetic fields (1Hz – 100kHz) (Health Physics, 99(6):818-836; 2010) (ICNIRP guidelines) to public reference levels of 5 kv/m for electric fields and 200 μT for magnetic flux density at one metre above ground level under maximum normal operating conditions (ie, when there are no faults in the transmission system).