

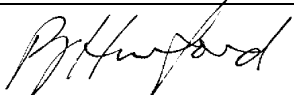


OP042

Operating Standard

for

**SECURITY OF SUPPLY –
PARTICIPANT OUTAGE PLAN**

| | |
|--------------------------|---|
| Document Title | OP042 SECURITY OF SUPPLY – PARTICIPANT OUTAGE PLAN |
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| Document Approver | Peter Hurford  |
| Issue Date | 26/3/2010 |
| Version | 3.0 |
| Obsolete Date | N/A |
| Circulation | Network |
| Related Documents | <p>OP039 for Load Shedding during Energy Constraint Contingency</p> <p>OP040 for Media Release</p> <p>OP041 for Notification of Outages</p> <p>OP024 for de-Loading MainPower’s GXP’s in the event of a Transpower Grid Emergency</p> |

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1 PURPOSE

This plan was written to comply with the Electricity Commission's Security of Supply Outage Plan (SOSOP).

Under the regulations, participant outage plans (POP) are required to specify the actions that would be taken to reduce the consumption of electricity to:

- reduce electricity consumption when a supply shortage is declared by the Electricity Commission;
- comply with requirements of the Electricity Commission's Security of Supply Outage Plan (SOSOP);
- comply with Electricity Governance (Security of Supply) Regulations 2008 and subsequent amendments; and
- supplement the Electricity Commission's Security of Supply Outage Plan.

Reducing demand by disconnecting supply to consumers would be a last resort after all other forms of savings, including voluntary savings, had been employed. MainPower will always endeavour to keep consumers supplied. MainPower will only disconnect consumers when directed to by the Electricity Commission.

The procedures outlined are in response to major generation shortages, including dry year scenarios. How an event is declared and how the Electricity Commission should communicate its requests are detailed. The main energy saving measure listed is rolling outages and how these are structured and implemented is discussed.

2 DEFINITIONS

| | |
|--|--|
| AUFLS | Automatic Under Frequency Load Shedding |
| Commission | Electricity Commission |
| EDN | Electricity Act 1992 and subsequent amendments |
| Feeder | A high voltage circuit typically supplying up to 2000 consumers |
| GXP | Transpower Grid Exit Point |
| GEN | Grid Emergency Notice |
| MainPower | MainPower (New Zealand) Limited |
| POP | Participant Outage Plan (this plan) |
| Regulations | Electricity Governance (Security of Supply) Regulations 2008 and subsequent amendments |
| Retailers | Electricity Retail Companies |
| Rolling Outages or Rolling Cuts | Planned electricity outage spread over different parts of the network at differing times |
| SOSOP | Security of Supply Outage Plan (Electricity Commission) |
| Supply Shortage Declaration | Declaration by the Electricity Commission under regulation 9 |
| System Operator | Operator of the national electricity transmission grid |

2.1 Associated Operating Standards

OP039 for Load Shedding during Energy Constraint Contingency

OP040 for Media Release

OP041 for Notification of Outages

OP024 for de-Loading MainPower's GXP's in the event of a Transpower Grid Emergency

3 BACKGROUND

3.1 Electricity Commission

The Electricity Commission is a Crown entity set up under the Electricity Act to oversee New Zealand's electricity industry and markets.

A function of the Electricity Commission under the Electricity Act is to use reasonable endeavours to ensure the security of the electricity supply. The Commission's activities include forecasting supply and demand, developing and publishing guideline hydro levels for security of supply, contracting for reserve energy, and improving the ability of consumers to manage price risks in the market.

3.2 Transpower

Transpower is a State Owned Enterprise, which owns and operates New Zealand's National Grid – the network of high Voltage transmission lines and substations that transports electricity from where it is generated to distribution line companies, such as MainPower.

As System Operator, Transpower manages the real-time operation of New Zealand's electricity transmission system. It keeps the right amount of energy flowing to match generated supply with demand.

3.3 MainPower (New Zealand) Limited

MainPower is the electricity network company that owns and maintains the electricity lines, cables and substations that deliver electricity to consumers in the North Canterbury and Kaikoura regions.

4 SUPPLY AND DEMAND

Transpower, as the System Operator, controls the transmission network to match generation with consumer demand. Constraints on the ability to manage this may be caused by:

- low lake levels reducing hydro generation;
- failure of a large generator; and
- a fault on critical transmission circuit.

The first two causes above could lead to an energy shortage, while the third could lead to a shortage of transmission capacity.

4.1 Load Reduction by MainPower

MainPower has some ability to reduce load by turning off domestic water heaters and irrigation pumps via ripple control in the North Canterbury and Kaikoura regions. Further load reductions would require disconnecting consumers.

4.2 Range of Events

Events that could lead the Commission to make a supply shortage declaration can in general terms be categorized as:

| | |
|---------------------------------------|---|
| Developing (Category A) Event: | Events that evolve over time, for example low hydro lake levels |
| Immediate (Category B) Event: | Events that occur with little or no warning, usually as a result of a transmission line or major generation failure |

4.3 Significant Incident

A Developing (Cat A) or Immediate (Cat B) Event will be classed by MainPower as a significant incident and the Network Manager will assemble a team of senior managers and staff to manage the incident.

Communication with retailers will be as per normal notification procedures described in OP041 for Notification of Outages.

Local Authorities, Civil Defence and other stakeholders will be notified of significant events by the Operations Manager.

5 ACTIONS FOR IMMEDIATE (CATEGORY B) EVENTS

Transpower, as the System Operator, is required to keep enough reserve generation to cover the risk of the largest connected generator tripping (or HVDC link failure). They are also required to keep the system frequency at 50Hz. If a large generator trips, it may cause a reduction in frequency which if not rectified can result in other generators tripping and could lead to complete failure of the electricity network.

As reserve generation cannot immediately pick up the load of a disconnected generator, an immediate load reduction is required until additional generation can pick up the load. Automatic load shedding groups reduce load in stages until the frequency stabilizes.

5.1 Reserve Market

Generators and load users with interruptible load, such as distribution networks, may offer in reserve capacity to cover the risk of the largest generating unit or a critical transmission line tripping. The ability to do this is affected by the numbers of frequency capable relays installed and the likely revenue stream from the market, less the compliance costs of participating in the reserve market. MainPower does not presently participate in this market.

5.2 Disconnecting Consumers

5.2.1 Automatic Under Frequency Load Shedding (AUFLS)

If the load shed by the Reserve Market tripping is insufficient to stabilize the network, further automatic load reduction is required.

Each distribution network company must have available at all times two blocks of load, each of 16% of its total load to be shed by automatic under frequency relays. In the South Island Transpower has installed these relays on selected feeders at the GXPs and the total load at the selected MainPower zone substations is disconnected by Transpower.

5.2.2 AUFLS Zone 1

If system frequency fails to recover after Reserve market load shed, AUFLS Zone 1 shedding by Transpower will occur. This will disconnect approximately 16% of MainPower's load by disconnecting consumers supply.

5.2.3 AUFLS Zone 2

If Zone 1 tripping fails to restore frequency, the next stage, Zone 2 activates. Transpower would disconnect a further 16% of MainPower's load.

5.2.4 Manual Load Shedding

If AUFLS Zone 1 and Zone 2 tripping fails to stabilize frequency the System Operator will shed more load. Once the frequency has stabilized the System Operator will advise the MainPower Network Control when load can be restored

5.3 Supply Restoration

Restoration of disconnected load must be restored in conjunction with the System Operator. This is to prevent overloading the transmission network and creating further instability.

5.4 Electricity Commission Supply Shortage Declaration

For some Immediate (Cat B) Events, the Electricity Commission may make a supply shortage declaration and directs rolling outages. In such a situation, the procedures for Developing (Cat A) Events will need to be implemented as per section 6 and 7.

5.5 Transmission Grid Emergency

The System Operator may request MainPower to reduce load under a grid emergency notice (GEN). MainPower would commence with shedding water heating and irrigation load and then if necessary shed feeders as per OP024 for de-Loading MainPower's GXP's in the event of a Transpower Grid Emergency

If a Developing (Cat A) Event is in place, the grid emergency will take precedence. Also if an Immediate (Cat B) Event is in place that is not a grid emergency, then the grid emergency will take precedence.

6 DEVELOPING (CATEGORY A) EVENTS

If the Commission requests through the System Operator, a load reduction for a planned Developing (Cat A) Event, MainPower would reduce demand to meet the Commission's targets. The targets are expected to be a weekly energy savings target that is reviewed each week. To reduce energy usage MainPower would disconnect HV feeders (rolling outages) in a controlled manner to enable targets to be reached. There may be financial penalties for not meeting the targets specified by the Commission. The shedding of water heating load is not a viable option for energy savings as this only defers usage and would not save energy. The shedding of irrigation load is not a viable option as the irrigation load shedding is only to be used in a grid or network emergency. Irrigation customers will be treated as other commercial consumers and will be part of the rolling outage plan (but they may voluntarily reduce load).

6.1 Rolling Outage Requirements for an Immediate (Cat B) Event

The rolling outages requirements specified in section 6 and 7 for the Developing (Cat A) Events will also be implemented for Immediate (Cat B) Events if the Commission makes a supply shortage declaration and directs the implementation of rolling outages

6.2 Declaration of a Developing (Cat A) Event

The Commission will endeavour to provide nine days prior notice of the requirement for weekly energy savings. It is MainPower's plan to use the standard planned outage notification procedure to retailers as detailed in OP041 for Notification of Outages. Any increase in the weekly energy savings target would also need nine days prior notice.

To declare a Developing (Cat A) Event, the Commission would need to request through the System Operator that a specific weekly energy savings target was to be enforced for a specific region for a specified time-frame. A notification system similar to the GEN procedure would be appropriate.

The Commission is expected to manage general media advertising of the need to conserve electricity and the impending rolling outages when they are requested.

6.3 Criteria for Rolling Outages

To ensure public health and safety is preserved and costs to economy are minimized the following table shows desired criteria for selecting feeders to be included in rolling outages.

| Priority | Priority Concern | Maintain Supply to: |
|----------|---------------------------|--|
| 1 | Public health and safety | Major hospitals, air traffic control centres, and emergency operation centres. |
| 2 | Important public services | Energy control centres, communication networks, water and sewage pumping, fuel delivery systems, and major port. |
| 3 | Public health and safety | Minor hospitals, medical centres, schools, and street lighting. |
| 4 | Food production | Dairy farms and milk production facilities. |
| 5 | Domestic food production | Commercial and industrial premises. |
| 6 | Disruption to consumers | Residential premises. |

Table 1 Priority Loads

These priorities are intended as guidelines, and because rolling outages will be implemented on a feeder by feeder basis, it is not possible to discriminate between individual consumers on the same feeder. For example, a predominantly residential feeder may also have small pockets of commercial or industrial consumers.

6.4 AUFLS Under Rolling Outages

The level of AUFLS during rolling outages needs to be maintained at 16% for each AUFLS block.

MainPower will either:

- include AUFLS feeder shedding but limit the shedding to ensure the AUFLS blocks of 16% are maintained. IE. If MainPower sheds 20% of load then 20% of the AUFLS load could also be shed, or
- exclude the current AUFLS feeders from rolling outage plans, which means that supply to lower priority feeders will be maintained while higher priority feeders experience an outage

If the requirement for rolling outages is for an extended period, then Tanspower would be requested to switch AUFLS to different feeders, while maintaining two 16% AUFLS blocks. This will allow rolling outages to be distributed more evenly (and on lower priority feeders).

Switching AUFLS to different feeders is not as simple as switching a switch as some protection changes are required. Transpower will require suitable notice (estimated at 10 working days) to make the changes.

6.5 Shutdown Notification

When requested to reduce demand with rolling outages, MainPower plans to use the planned outage procedure as detailed in OP041 for Notification of Outages to advise retailers in advance, of pending outages. The time and extent of advertised outages will be approximate.

6.6 Vulnerable Consumers and Priority Sites

MainPower will endeavour to give retailers as much advance notice as possible of pending rolling outages to enable them to notify vulnerable consumers.

6.7 Grid Emergency During a Developing (Cat A) Event

If the System Operator declares a grid emergency during a Developing (Cat A) Event, the grid emergency will take priority. As water heating and irrigation load generally would not be used to reduce load in a Developing (Cat A) Event, MainPower would have the water heating and irrigation load available for load reduction when required for the grid emergency. If water heating and irrigation load is insufficient, the rolling outage feeders may need to be rearranged to comply with the grid emergency. After the grid emergency is over, the rolling outage pattern would continue.

6.8 Supply Restoration

Disconnected load from Immediate (Cat B) or Developing (Cat A) Events must be restored in conjunction with the System Operator. This is to prevent overloading the transmission network and creating instability. The System Operator has advised that load changes of less than 25 MW in any five minutes may be implemented by a network without their prior approval.

6.9 Communication

MainPower will keep media and consumers informed of planned interruptions to supply before and during the outages. Media will be informed as per MainPower's standard communications procedure, and the retailers will be responsible for consumer notification.

6.9.1 Communication with System Operator

All communications with the System Operator will be using Transpower's TPSN telephone in MainPowers Control Room in Rangiora or via standard telecommunication systems.

Prior to notifying and implementing rolling outages, MainPower will consult with the System Operator to establish a process for load shedding and restoration.

6.9.2 Communication with The Commission

MainPower will contact the Commission's Emergency Response Project Manager for administration purposes (including reporting performance against targets) using the following details:

| | | |
|----------------------------|-------|-------------|
| Electricity Commission | Phone | 04 460 8879 |
| Level 7, ASB Bank building | Fax | 04 460 8860 |
| 2 Hunter Street | | |
| PO Box 10041 | | |
| Wellington | | |
| 6143 | | |

6.9.3 Communication with MainPower

MainPower New Zealand Limited contact details are:

| | | |
|------------------|----------|---------------|
| MainPower NZ Ltd | Phone | 03 311 8300 |
| 5 High Street | Fax | 03 311 8301 |
| PO Box 346 | 24 Hours | 0508 60 70 80 |
| Rangiora | | |
| 7440 | | |

6.10 MainPower Staff Responsibilities

| Role | Person Responsible |
|--|--------------------|
| Receive communication from Commission | Network Manager |
| Receive communication from System Operator | Network Controller |
| Implement this plan | Operations Manager |
| Weekly savings report | Operations Manager |
| Retailer notification | Network Controller |
| Weekly savings report | Operations Manager |
| Revoking rolling outages | Network Manager |
| Reporting to Electricity Commission | Network Manager |
| Reporting to media, public agencies | Network Manager |

Table 2 – MainPower Staff Responsibilities

Within one day of the declaration of a Developing (Cat A) Event, the Network Manager will notify the Commission of the updated contact details including telephone numbers and email address for each of the positions named in Table 2.

6.11 Rolling Outages Strategy and Methodology

The Operations Manager and the Network Controller will review weekly targets and prepare plans for weekly rolling outages based on savings required. The plans will be forwarded to the retailers for consumer and media notification. Rolling outages will wherever possible disconnect feeders using the priority listed in Table 1.

Planned energy savings will be based upon network energy usage for the same period last year.

6.12 Target Monitoring Responsibilities

For load shedding to a weekly target, the Operations Manager will monitor energy savings against target and, together with the Network Manager, review future load shedding to increase or decrease the amount of rolling outages to enable the weekly target to be met. The Operations Manager will be responsible for daily and weekly reporting of consumption relative to target levels. The Operations Manager will also be responsible for providing the predicted load for the next week on a seven day rolling basis. This prediction is to be by GXP for each half-hour.

6.13 Target Monitoring Requirements

When The Commission requests, through the System Operator, a load reduction for a planned Developing (Cat A) Event, MainPower will provide the following information to the System Operator:

- A rolling week-ahead load forecast that forecasts the half-hourly load at each GXP
- Any expected change to the forecast for a GXP of more than 20% for any trading period
- The level of consumption relative to the target levels
- The nature and extent of the rolling outages

MainPower will also report to The Commission to show compliance with the requirements of the participant outage plan. The Commission will specify the frequency of the compliance reporting.

6.14 Log of Rolling Outages

Network Controllers will log times of disconnection and reconnection of all feeder interruptions and enter in the log. The log sheet to be used by Network Controllers is shown in Appendix 1. These will be used to monitor the rolling outage program.

7 ROLLING OUTAGES

When instructed by the System Operator, following a supply shortage declaration, to reduce demand, rolling outages will be instigated by the Operations Manager as per this plan and outage strategy. The Operations Manager will ensure load shedding schedules are prepared, Network Controller rosters are adjusted as required, and load is controlled and monitored to meet desired targets. Schedules of estimated load shedding, restoration times and quantities are to be forwarded to the System Operator seven days before the planned outage. If significant variation is noticed, or expected, from the schedules provided to the System Operator then MainPower shall advise the System Operator of this change.

7.1 Outage Time

Where possible, MainPower will try to comply with priorities in Table 1 to select feeders for rolling outages. MainPower will endeavour to keep rolling outages to any consumer no longer than 4 hours per day for a 10% savings target. For savings more than 10% longer and more frequent outages may be necessary.

Timing of outages will be approximate and could vary daily due to network or System Operator constraints. Example schedules are provided in OP039 for Load Shedding during Energy Constraint Contingency and in Appendix 3 Example Rolling Outage Schedules.

7.2 Priority Consumers Consolidated to Feeders

Rolling outage feeders will contain a variety of customer priorities from Table 1. The priority for each rolling outage feeder will be based on the priority ratings assessed for the connections within each feeder, according to Table 3, below.

| Priority | Feeder |
|----------|---|
| 1 | Any feeder that has one or more priority 1 connections |
| 2 | Any feeder that has three or more priority 2 connections |
| 3 | Any feeder that has an average priority between 2.5 & 3.5 |
| 4 | Any feeder that has an average priority between 3.5 & 4.5 |
| 5 | Any feeder that has an average priority between 4.5 & 5.5 |
| 6 | Any feeder that has an average priority greater than 5.5 |

Table 3 – Customer priority consolidated to feeder priority

7.3 Feeder Selection

The demography of MainPowers customer base is rural, rural centres and a wide range of commercial and industrial. MainPower does **not** supply any cities, major hospitals, major airports or major ports.

The feeder priorities of Table 3 result in the load breakdown shown in Table 4.

| Priority | MW | % of Total Load |
|----------|------|-----------------|
| 1 | 0.0 | 0.0% |
| 2 | 19.6 | 27.3% |
| 3 | 0.0 | 0.0% |
| 4 | 14.3 | 19.9% |
| 5 | 19.2 | 26.8% |
| 6 | 18.5 | 25.9% |
| Total | 71.7 | 100% |

Table 4 – Load breakdown from feeder priority

Feeders to be disconnected are shown in OP039 for Load Shedding during Energy Constraint Contingency which reflects the priority guidelines shown in Table 1. The consumer priority type, that will make up rolling outages for various levels of savings are shown in Table 5, below.

| | 5% Saving | 10% Saving | 15% Saving | 20% Saving | 25% Saving |
|-----------------|--|------------|------------|------------|------------|
| Priority | Percentage Breakdown of Required Saving | | | | |
| 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 10 | 15 | 21 | 27 |
| 3 | 0 | 0 | 0 | 0 | 0 |
| 4 | 26 | 20 | 22 | 21 | 20 |
| 5 | 37 | 35 | 30 | 28 | 27 |
| 6 | 37 | 35 | 31 | 30 | 26 |

Table 5 – Saving Percentage for Required Saving for Priority Type

The outage breakdown percentages are indicative only and will be reviewed daily to achieve the specified targets.

7.4 Contingent Events

If an unplanned event occurs, such as a Civil Defence emergency that could alter the planned rolling outages, Network Controllers will be responsible for communication with retailers of any changes to the advertised program.

7.5 Consumer Liaison

For major consumers, with dedicated HV feeder supplies, short-term rolling outages may not be appropriate. As an alternative, longer single outages could be offered if that was easier for them to plan.

Other consumers are advised to contact their retailer for information on the priority of the feeder they are supplied from and outage times.

7.6 Vulnerable Consumers

Retailers maintain lists of consumers with health and safety issues. It is not feasible for MainPower to prevent rolling outages affecting individual vulnerable consumers. MainPower will endeavour to give retailers as much advance notice as possible of pending rolling outages to enable them to notify vulnerable consumers. During rolling outages general media releases will advise consumers with health problems as to their best course of action.

7.7 Rolling Outage GXPs

The following GXPs will experience rolling outages:

- Southbrook
- Kaiapoi
- Waipara
- Culverden
- Kaikoura

Ashley GXP has only 1 customer and will not be part of the rolling outages but will provide savings by controlled plant shutdown as detailed in Section 7.5 of this document. Any reduction in load on Ashley GXP will be communicated to the System Operator and the Commission.

Wigram customers are connected to Islington GXP via Orions Networks and will not be part of MainPowers rolling outages as they will be part of Orions outage plan.

8 AMENDMANTS

| | | |
|-------------|------------|-------------------------------------|
| Version 1.0 | 26/03/2010 | New document |
| Version 2.0 | 31/05/2010 | Electricity Commission Improvements |
| Version 3.0 | 08/06/2010 | Electricity Commission Improvements |
| | | |
| | | |
| | | |
| | | |

APPENDIX 2 – Feeder Table

| Site No | Feeder Description | Substation | GXP | AUFLS | Urban or Rural | Biggest Towns | V | ICPs 30/11/9 | MW | 11kV Amps 8:45am 3/8/9 | Percentage of Total Load | Priority as per Table 1 |
|---------|--------------------|----------------|------------|---------|-----------------|--------------------------------------|----|--------------|-----|------------------------|--------------------------|-------------------------|
| BN23 | Bennetts | Bennetts | Southbrook | Nil | Rural | | 11 | 149 | 0.2 | 12 | 0% | 6 |
| BN24 | Horroville | Bennetts | Southbrook | Nil | Rural | | 11 | 387 | 0.6 | 34 | 1% | 6 |
| BN25 | Carleton | Bennetts | Southbrook | Nil | Rural | | 11 | 195 | 0.5 | 28 | 1% | 6 |
| C20 | Summerhill | Cust | Southbrook | Nil | Rural with Town | Cust | 11 | 385 | 0.5 | 25 | 1% | 6 |
| C30 | West Eyreton | Cust | Southbrook | Nil | Rural | | 11 | 262 | 0.4 | 22 | 1% | 6 |
| C40 | Springbank | Cust | Southbrook | Nil | Rural | | 11 | 192 | 0.3 | 16 | 0% | 6 |
| K1 | Camside | Kaiapoi | Kaiapoi | Nil | Rural with Town | Kaiapoi, Pines Beach, Kairaki Beach | 11 | 1317 | 1.6 | 84 | 2% | 5 |
| K15 | SW Kaiapoi | S1 | Kaiapoi | Nil | Urban | | 11 | 701 | 1.5 | 81 | 2% | 4 |
| K16 | NW Kaiapoi | S1 | Kaiapoi | Nil | Urban | | 11 | 560 | 2.4 | 128 | 3% | 4 |
| K18 | NE Kaiapoi | S1 | Kaiapoi | Nil | Urban | | 11 | 946 | 1.6 | 85 | 2% | 4 |
| K19 | SE Kaiapoi | S1 | Kaiapoi | Nil | Urban | | 11 | 442 | 1.8 | 92 | 2% | 4 |
| K4 | Ohoka Rd | Kaiapoi | Kaiapoi | Nil | Urban | | 11 | 1224 | 2.5 | 131 | 3% | 2 |
| K5 | Load Control | Kaiapoi | Kaiapoi | Nil | Rural | | 11 | 3 | 0 | 0 | 0% | 5 |
| K6 | Clarkville | Kaiapoi | Kaiapoi | Nil | Rural with Town | Kainga, Stewarts Gully, Bridgend | 11 | 689 | 1.8 | 94 | 3% | 5 |
| K7 | Wetheral | Kaiapoi | Kaiapoi | Nil | Rural with Town | Ohoka, Mandeville | 11 | 1211 | 1.8 | 94 | 3% | 5 |
| P25 | Balmoral | Mouse Point | Culverden | Nil | Rural | | 22 | 375 | 0.9 | 24 | 1% | 5 |
| P35 | Culverden | Mouse Point | Culverden | Nil | Rural with Town | Culverden | 22 | 434 | 0.9 | 24 | 1% | 4 |
| P45 | Waiau | Mouse Point | Culverden | Nil | Rural with Town | Rotherham, Waiau | 22 | 772 | 1.0 | 27 | 1% | 5 |
| R27 | River Road | Rangiora North | Southbrook | Nil | Rural with Town | Ashley | 11 | 450 | 1.1 | 57 | 2% | 6 |
| R37 | West Belt | Rangiora North | Southbrook | Nil | Urban | | 11 | 789 | 1.7 | 91 | 2% | 6 |
| R47 | Loburn | Rangiora North | Southbrook | Nil | Rural | | 11 | 1259 | 2.2 | 113 | 3% | 6 |
| S13 | Flaxton Woodend | Southbrook | Southbrook | Nil | Rural with Town | Woodend, Woodend Beach, Tuahiwi | 11 | 1116 | 3 | 201 | 4% | 2 |
| S14 | Rangiora East | Southbrook | Southbrook | Nil | Urban | | 11 | 1420 | 3.5 | 267 | 5% | 2 |
| S15 | Waikuku | Southbrook | Southbrook | Nil | Rural with Town | Waikuku, Waikuku Beach | 11 | 1631 | 2.2 | 159 | 3% | 2 |
| S16 | Rangiora Borough | Southbrook | Southbrook | Nil | Urban | | 11 | 1793 | 3.2 | 262 | 4% | 4 |
| S33 | Fernside | Rangiora West | Southbrook | Nil | Rural | | 11 | 492 | 1.0 | 51 | 1% | 6 |
| S34 | West Belt | Rangiora West | Southbrook | Nil | Urban | | 11 | 718 | 1.4 | 73 | 2% | 5 |
| S35 | Rangiora West | Rangiora West | Southbrook | Nil | Urban | | 11 | 84 | 0.1 | 6 | 0% | 4 |
| S36 | South Belt | Rangiora West | Southbrook | Nil | Urban | | 11 | 1093 | 1.9 | 100 | 3% | 4 |
| SW62 | North | Swannanoa | Southbrook | Nil | Rural | | 11 | 341 | 0.7 | 36 | 1% | 6 |
| SW63 | South | Swannanoa | Southbrook | Nil | Rural | | 11 | 402 | 0.8 | 41 | 1% | 6 |
| SW64 | East | Swannanoa | Southbrook | Nil | Rural | | 11 | 162 | 0.4 | 21 | 1% | 6 |
| SW65 | West | Swannanoa | Southbrook | Nil | Rural | | 11 | 181 | 0.4 | 20 | 1% | 6 |
| X28 | View Hill | Oxford | Southbrook | Nil | Rural with Town | Half Oxford | 11 | 710 | 0.9 | 47 | 1% | 2 |
| X38 | Ashley Gorge | Oxford | Southbrook | Nil | Rural with Town | Half Oxford | 11 | 812 | 0.9 | 47 | 1% | 2 |
| X48 | Burnt Hill | Oxford | Southbrook | Nil | Rural | | 11 | 130 | 0.9 | 47 | 1% | 6 |
| C14/119 | Wigram | Wigram | Islington | NA | Urban | | 11 | 282 | 0.0 | | 0% | |
| C14/120 | Wigram | Wigram | Islington | NA | Urban | | 11 | 0 | 0.0 | | 0% | |
| 2612 | Emergency | Ashley | Ashley | Block 2 | Rural | | 11 | 0 | 0 | | 0% | 6 |
| 2622 | CTP central 2 | Ashley | Ashley | Block 2 | Rural | | 11 | 1 | 2.5 | 131 | 3% | 5 |
| 2642 | CTP East | Ashley | Ashley | Block 2 | Rural | | 11 | 1 | 2.5 | 131 | 3% | 5 |
| 2662 | CTP central 1 | Ashley | Ashley | Block 2 | Rural | | 11 | 1 | 2.5 | 131 | 3% | 5 |
| 2682 | CTP West | Ashley | Ashley | Block 2 | Rural | | 11 | 1 | 2.5 | 131 | 3% | 5 |
| E80 | Lochiel | Lochiel | Culverden | Block 2 | Rural | | 11 | 63 | 0.1 | 4 | 0% | 6 |
| J77 | Leslie Hills | Leslie Hills | Culverden | Block 2 | Rural | | 11 | 113 | 0.2 | 10 | 0% | 6 |
| N34 | Argelins | Hanmer | Culverden | Block 2 | Rural with Town | Half Hanmer | 11 | 793 | 0.9 | 47 | 1% | 2 |
| N44 | Scarborough | Hanmer | Culverden | Block 2 | Rural with Town | Half Hanmer | 11 | 492 | 1.1 | 56 | 1% | 2 |
| Q79 | Marble Point | Marble Point | Culverden | Block 2 | Rural | | 11 | 8 | 0.0 | 1 | 0% | 6 |
| G31 | Ethelton | Greta | Waipara | Block 1 | Rural | | 11 | 131 | 0.2 | 11 | 0% | 6 |
| G32 | Motunau | Greta | Waipara | Block 1 | Rural with Town | Motunau Beach | 11 | 246 | 0.2 | 9 | 0% | 6 |
| G33 | Scargill | Greta | Waipara | Block 1 | Rural with Town | Greta Valley, Scargill | 11 | 182 | 0.3 | 15 | 0% | 6 |
| H21 | Waikari | Hawarden | Waipara | Block 1 | Rural with Town | Waikari | 11 | 327 | 0.5 | 24 | 1% | 6 |
| H31 | Hawarden | Hawarden | Waipara | Block 1 | Rural with Town | Hawarden | 11 | 548 | 0.7 | 36 | 1% | 6 |
| H41 | Medbury | Hawarden | Waipara | Block 1 | Rural with Town | Hurunui | 11 | 166 | 0.2 | 13 | 0% | 6 |
| L51 | Claverley | Leader | Waipara | Block 1 | Rural | | 11 | 47 | 0.1 | 5 | 0% | 6 |
| L52 | Leader Rd | Leader | Waipara | Block 1 | Rural | | 11 | 81 | 0.1 | 3 | 0% | 6 |
| L53 | Parnassus | Leader | Waipara | Block 1 | Rural | | 11 | 56 | 0.1 | 4 | 0% | 6 |
| O76 | Oaro | Oaro | Kaikoura | Block 1 | Rural | | 11 | 163 | 0.0 | 1 | 0% | 6 |
| T41 | North | Cheviot | Waipara | Block 1 | Rural | | 11 | 206 | 0.3 | 14 | 0% | 6 |
| T42 | Town | Cheviot | Waipara | Block 1 | Rural with Town | Cheviot, Gore Bay | 11 | 484 | 0.7 | 37 | 1% | 6 |
| T43 | South | Cheviot | Waipara | Block 1 | Rural | | 11 | 222 | 0.3 | 14 | 0% | 6 |
| U26 | North | Ludstone | Kaikoura | Block 1 | Rural | | 11 | 525 | 0.7 | 56 | 1% | 5 |
| U36 | South | Ludstone | Kaikoura | Block 1 | Rural | | 11 | 305 | 0.4 | 18 | 1% | 6 |
| U46 | Churchill Street | Ludstone | Kaikoura | Block 1 | Urban | | 11 | 1074 | 0.8 | 68 | 1% | 4 |
| U56 | Town | Ludstone | Kaikoura | Block 1 | Urban | | 11 | 539 | 2.3 | 94 | 3% | 2 |
| V75 | Claverley | Claverley | Kaikoura | Block 1 | Rural | | 11 | 76 | 0.0 | 2 | 0% | 6 |
| W21 | Omihi | MacKenzies Rd | Waipara | Block 1 | Rural with Town | 3rd of Waipara | 11 | 286 | 0.4 | 21 | 1% | 6 |
| W22 | Weka Pass | MacKenzies Rd | Waipara | Block 1 | Rural with Town | 3rd of Waipara | 11 | 118 | 0.1 | 7 | 0% | 6 |
| W23 | Mt Cass | MacKenzies Rd | Waipara | Block 1 | Rural with Town | 3rd of Waipara | 11 | 248 | 0.7 | 37 | 1% | 2 |
| Y23 | Balcairn | Amberley | Waipara | Block 1 | Rural with Town | Leithfield, Leithfield Beach, Sefton | 11 | 1064 | 1.7 | 90 | 2% | 6 |
| Y33 | Amberley | Amberley | Waipara | Block 1 | Rural with Town | Amberley, Amberly Beach | 11 | 957 | 1.6 | 86 | 2% | 2 |
| Y43 | Broomfield | Amberley | Waipara | Block 1 | Rural | | 11 | 365 | 0.3 | 17 | 0% | 6 |

APPENDIX 3 – Example Rolling Outage Schedules

Example of 5% Saving

TransPower rolling feeder outage schedule
Energy Shortage Constraint

 Transpower Controlled

 AUFLS Block 1
 AUFLS Block 2

 Load must not be reduced by more than 1.42MW
 Load must not be reduced by more than 1.37MW

A request will be received from the Grid Owner for an average continuous load reduction. See OP042 for more details
Shed Blocks are setup to maintain two AUFLS Blocks of 16% of total load
All available feeders affected once at most suitable time of day
6 x 8 repeating schedule.

| | | | | |
|-----------------|------|---------|--|----------------------------|
| | MW | MWhrs | | |
| Estimated Total | 71.7 | 1376.64 | | Start Date 29/03/10 |
| Average Saving | 4.9% | 4.9% | | Start Time 1:00 |
| Reduction | 4.0 | 67.2 | | Period Length 4:00 |
| | | | | Outage Time 2:00 |

| Monday 1:00 - 3:00 | | | Monday 5:00 - 7:00 | | | Monday 9:00 - 11:00 | | | Monday 13:00 - 15:00 | | | Monday 17:00 - 19:00 | | | Monday 21:00 - 23:00 | | |
|------------------------|------------|--------------|------------------------|-------------|--------------|------------------------|--------------|--------------|------------------------|--------------|--------------|------------------------|------------|--------------|------------------------|---------------|--------------|
| Feeder | Location | Load | Feeder | Location | Load | Feeder | Location | Load | Feeder | Location | Load | Feeder | Location | Load | Feeder | Location | Load |
| R47 | Loburn | 2.2 | S16 | Rangiora Bc | 3.2 | S13 | Flaxton Wod | 3.0 | K4 | Ohoka Rd | 2.5 | K16 | NW Kaiapoi | 2.4 | S15 | Waikuku | 2.2 |
| S36 | South Belt | 1.9 | K7 | Wetheral | 1.8 | K6 | Clarkville | 1.8 | K19 | SE Kaiapoi | 1.8 | R37 | West Belt | 1.7 | K18 | NE Kaiapoi | 1.6 |
| K15 | SW Kaiapoi | 1.5 | S34 | West Belt | 1.4 | R27 | River Road | 1.1 | P45 | Waiau | 1.0 | S33 | Fernside | 1.0 | P35 | Culverden | 0.9 |
| X48 | Burnt Hill | 0.9 | X38 | Ashley Gorg | 0.9 | X28 | View Hill | 0.9 | SW63 | South | 0.8 | SW62 | North | 0.7 | BN24 | Horriville | 0.6 |
| C20 | Summerhill | 0.5 | C30 | West Eyret | 0.4 | SW64 | East | 0.4 | SW65 | West | 0.4 | C40 | Springbank | 0.3 | BN23 | Bennetts | 0.2 |
| U26 | North | 0.7 | H21 | Waikari | 0.5 | W21 | Omih | 0.4 | W23 | Mt Cass | 0.7 | H31 | Hawarden | 0.7 | U46 | Churchill Str | 0.8 |
| T41 | North | 0.3 | H41 | Medbury | 0.2 | G31 | Ethelton | 0.2 | Y43 | Broomfield | 0.3 | T43 | South | 0.3 | U36 | South | 0.4 |
| L53 | Parnassus | 0.1 | V75 | Claverley | 0.0 | G32 | Motunau | 0.2 | W22 | Weka Pass | 0.1 | L52 | Leader Rd | 0.1 | O76 | Oaro | 0.0 |
| Nil | 0 | 0.0 | Nil | 0 | 0.0 | Nil | 0 | 0.0 | Nil | 0 | 0.0 | Nil | 0 | 0.0 | Nil | 0 | 0.0 |
| Nil | 0 | 0.0 | E80 | Lochiel | 0.1 | Q79 | Marble Point | 0.0 | J77 | Leslie Hills | 0.2 | Nil | 0 | 0.0 | Nil | 0 | 0.0 |
| Total | | 8.0 | Total | | 8.5 | Total | | 8.0 | Total | | 7.8 | Total | | 8.0 | Total | | 7.9 |
| Outage Saving % | | 11.2% | Outage Saving % | | 11.9% | Outage Saving % | | 11.1% | Outage Saving % | | 10.9% | Outage Saving % | | 11.2% | Outage Saving % | | 11.0% |

Example of 10% Saving

TransPower rolling feeder outage schedule
Energy Shortage Constraint

Transpower Controlled

AUFLS Block 1
AUFLS Block 2

Load must not be reduced by more than 1.42MW
Load must not be reduced by more than 1.37MW

A request will be received from the Grid Owner for an average continuous load reduction. See OP042 for more details
Shed Blocks are setup to maintain two AUFLS Blocks of 16% of total load
All available feeders affected once at most suitable time of day
6 x 8 repeating schedule.

| | | | | |
|-----------------|------|---------|---------------|----------|
| | MW | MWhrs | Start Date | 29/03/10 |
| Estimated Total | 71.7 | 1376.64 | Start Time | 1:00 |
| Average Saving | 9.8% | 9.8% | Period Length | 4:00 |
| Reduction | 8.0 | 134.4 | Outage Time | 4:00 |

| Day | Time | Feeder | Location | Load | Total | Outage Saving % |
|-----------|---------------|--------|---------------|------|-------|-----------------|
| Monday | 1:00 - 5:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| | | L53 | Parnassus | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Monday | 5:00 - 9:00 | K7 | Wetheral | 1.8 | 8.5 | 11.9% |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Monday | 9:00 - 13:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Monday | 13:00 - 17:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| | | W22 | Weka Pass | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | J77 | Leslie Hills | 0.2 | | |
| Monday | 17:00 - 21:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| | | L52 | Leader Rd | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | N34 | Argelins | 0.9 | | |
| Monday | 21:00 - 1:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| | | O76 | Oaro | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | N44 | Scarborough | 1.1 | | |
| Tuesday | 1:00 - 5:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| | | L51 | Claverley | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Tuesday | 5:00 - 9:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| | | L53 | Parnassus | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Tuesday | 9:00 - 13:00 | S16 | Rangiora Bd | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Tuesday | 13:00 - 17:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Tuesday | 17:00 - 21:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| | | W22 | Weka Pass | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | J77 | Leslie Hills | 0.2 | | |
| Tuesday | 21:00 - 1:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| | | L52 | Leader Rd | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | N34 | Argelins | 0.9 | | |
| Wednesday | 1:00 - 5:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| | | O76 | Oaro | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | N44 | Scarborough | 1.1 | | |
| Wednesday | 5:00 - 9:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| | | L51 | Claverley | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Wednesday | 9:00 - 13:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| | | L53 | Parnassus | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Wednesday | 13:00 - 17:00 | S16 | Rangiora Bd | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Wednesday | 17:00 - 21:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Wednesday | 21:00 - 1:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| | | W22 | Weka Pass | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | J77 | Leslie Hills | 0.2 | | |
| Thursday | 1:00 - 5:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| | | L52 | Leader Rd | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | N34 | Argelins | 0.9 | | |
| Thursday | 5:00 - 9:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| | | O76 | Oaro | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | N44 | Scarborough | 1.1 | | |
| Thursday | 9:00 - 13:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| | | L51 | Claverley | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Thursday | 13:00 - 17:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| | | L53 | Parnassus | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Thursday | 17:00 - 21:00 | S16 | Rangiora Bd | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Thursday | 21:00 - 1:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Friday | 1:00 - 5:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| | | W22 | Weka Pass | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | J77 | Leslie Hills | 0.2 | | |
| Friday | 5:00 - 9:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| | | L53 | Parnassus | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Friday | 9:00 - 13:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| | | O76 | Oaro | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | N44 | Scarborough | 1.1 | | |
| Friday | 13:00 - 17:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| | | L51 | Claverley | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Friday | 17:00 - 21:00 | S16 | Rangiora Bd | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Friday | 21:00 - 1:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Saturday | 1:00 - 5:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | | | | | |

Example of 15% Saving

TransPower rolling feeder outage schedule
Energy Shortage Constraint

Transpower Controlled

AUFLS Block 1
AUFLS Block 2

Load must not be reduced by more than 1.42MW
Load must not be reduced by more than 1.37MW

A request will be received from the Grid Owner for an average continuous load reduction. See OP042 for more details
Shed Blocks are setup to maintain two AUFLS Blocks of 16% of total load
All available feeders affected once at most suitable time of day
6 x 8 repeating schedule.

| | | | | |
|-----------------|-------|---------|---------------|----------|
| | MW | MWhrs | Start Date | 29/03/10 |
| Estimated Total | 71.7 | 1376.64 | Start Time | 1:00 |
| Average Saving | 14.6% | 14.6% | Period Length | 4:00 |
| Reduction | 12.0 | 201.6 | Outage Time | 6:00 |

| Day | Time | Feeder | Location | Load | Total | Outage Saving % |
|-----------|---------------|--------|---------------|------|-------|-----------------|
| Monday | 1:00 - 7:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| Monday | 5:00 - 11:00 | S16 | Rangiora Bc | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| Monday | 9:00 - 15:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omih | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| Monday | 13:00 - 19:00 | S13 | Flaxton Wod | 3.0 | 7.8 | 10.9% |
| | | K4 | Ohoka Rd | 2.5 | | |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| Monday | 17:00 - 23:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| Monday | 21:00 - 3:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| Tuesday | 1:00 - 7:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| Tuesday | 5:00 - 11:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| Tuesday | 9:00 - 15:00 | S16 | Rangiora Bc | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| Tuesday | 13:00 - 19:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omih | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| Tuesday | 17:00 - 23:00 | K16 | NW Kaiapoi | 2.4 | 7.8 | 10.9% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| Tuesday | 21:00 - 3:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| Wednesday | 1:00 - 7:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| Wednesday | 5:00 - 11:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| Wednesday | 9:00 - 15:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| Wednesday | 13:00 - 19:00 | S16 | Rangiora Bc | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| Wednesday | 17:00 - 23:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omih | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| Wednesday | 21:00 - 3:00 | K16 | NW Kaiapoi | 2.4 | 7.8 | 10.9% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| Thursday | 1:00 - 7:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| Thursday | 5:00 - 11:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| Thursday | 9:00 - 15:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| Thursday | 13:00 - 19:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| Thursday | 17:00 - 23:00 | S16 | Rangiora Bc | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| Thursday | 21:00 - 3:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omih | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| Friday | 1:00 - 7:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| Friday | 5:00 - 11:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| Friday | 9:00 - 15:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| Friday | 13:00 - 19:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| Friday | 17:00 - 23:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| Friday | 21:00 - 3:00 | S16 | Rangiora Bc | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| Saturday | 1:00 - 7:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omih | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| Saturday | 5:00 - 11:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| Saturday | 9:00 - 15:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| Saturday | 13:00 - 19:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| Saturday | 17:00 - 23:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| Saturday | 21:00 - 3:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |

Example of 20% Saving

TransPower rolling feeder outage schedule
Energy Shortage Constraint

Transpower Controlled

AUFLS Block 1
AUFLS Block 2

Load must not be reduced by more than 1.42MW
Load must not be reduced by more than 1.37MW

A request will be received from the Grid Owner for an average continuous load reduction. See OP042 for more details
Shed Blocks are setup to maintain two AUFLS Blocks of 16% of total load
All available feeders affected once at most suitable time of day
6 x 8 repeating schedule.

| | | | | |
|-----------------|-------|---------|---------------|----------|
| | MW | MWhrs | Start Date | 29/03/10 |
| Estimated Total | 71.7 | 1376.64 | Start Time | 1:00 |
| Average Saving | 19.5% | 19.5% | Period Length | 4:00 |
| Reduction | 16.0 | 268.8 | Outage Time | 8:00 |

| Monday 1:00 - 9:00 | | | Monday 5:00 - 13:00 | | | Monday 9:00 - 17:00 | | | Monday 13:00 - 21:00 | | | Monday 17:00 - 1:00 | | | Monday 21:00 - 5:00 | | |
|------------------------|------------|--------------|------------------------|-------------|--------------|------------------------|--------------|--------------|------------------------|--------------|--------------|------------------------|------------|--------------|------------------------|---------------|--------------|
| Feeder | Location | Load | Feeder | Location | Load | Feeder | Location | Load | Feeder | Location | Load | Feeder | Location | Load | Feeder | Location | Load |
| R47 | Loburn | 2.2 | S16 | Rangiora Bc | 3.2 | S13 | Flaxton Wod | 3.0 | K4 | Ohoka Rd | 2.5 | K16 | NW Kaiapoi | 2.4 | S15 | Waikuku | 2.2 |
| S36 | South Belt | 1.9 | K7 | Wetheral | 1.8 | K6 | Clarkville | 1.8 | K19 | SE Kaiapoi | 1.8 | R37 | West Belt | 1.7 | K18 | NE Kaiapoi | 1.6 |
| K15 | SW Kaiapoi | 1.5 | S34 | West Belt | 1.4 | R27 | River Road | 1.1 | P45 | Waiau | 1.0 | S33 | Fernside | 1.0 | P35 | Culverden | 0.9 |
| X48 | Burnt Hill | 0.9 | X38 | Ashley Gorg | 0.9 | X28 | View Hill | 0.9 | SW63 | South | 0.8 | SW62 | North | 0.7 | BN24 | Horriville | 0.6 |
| C20 | Summerhill | 0.5 | C30 | West Eyretc | 0.4 | SW64 | East | 0.4 | SW65 | West | 0.4 | C40 | Springbank | 0.3 | BN23 | Bennetts | 0.2 |
| U26 | North | 0.7 | H21 | Waikari | 0.5 | W21 | Omih | 0.4 | W23 | Mt Cass | 0.7 | H31 | Hawarden | 0.7 | U46 | Churchill Str | 0.8 |
| T41 | North | 0.3 | H41 | Medbury | 0.2 | G31 | Ethelton | 0.2 | Y43 | Broomfield | 0.3 | T43 | South | 0.3 | U36 | South | 0.4 |
| L53 | Parnassus | 0.1 | V75 | Claverley | 0.0 | G32 | Motunau | 0.2 | W22 | Weka Pass | 0.1 | L52 | Leader Rd | 0.1 | O76 | Oaro | 0.0 |
| Nil | 0 | 0.0 | Nil | 0 | 0.0 | Nil | 0 | 0.0 | Nil | 0 | 0.0 | Nil | 0 | 0.0 | Nil | 0 | 0.0 |
| Nil | 0 | 0.0 | E80 | Lochiel | 0.1 | Q79 | Marble Point | 0.0 | J77 | Leslie Hills | 0.2 | N34 | Argelins | 0.9 | N44 | Scarboroug | 1.1 |
| Total | | 8.0 | Total | | 8.5 | Total | | 8.0 | Total | | 7.8 | Total | | 8.0 | Total | | 7.9 |
| Outage Saving % | | 11.2% | Outage Saving % | | 11.9% | Outage Saving % | | 11.1% | Outage Saving % | | 10.9% | Outage Saving % | | 11.2% | Outage Saving % | | 11.0% |

Example of 25% Saving

TransPower rolling feeder outage schedule
Energy Shortage Constraint

Transpower Controlled

AUFLS Block 1
AUFLS Block 2

Load must not be reduced by more than 1.42MW
Load must not be reduced by more than 1.37MW

A request will be received from the Grid Owner for an average continuous load reduction. See OP042 for more details
Shed Blocks are setup to maintain two AUFLS Blocks of 16% of total load
All available feeders affected once at most suitable time of day
6 x 8 repeating schedule.

| | | |
|-----------------|-------|---------|
| | MW | MWhrs |
| Estimated Total | 71.7 | 1376.64 |
| Average Saving | 24.4% | 24.4% |
| Reduction | 20.0 | 336.0 |

| | |
|---------------|----------|
| Start Date | 29/03/10 |
| Start Time | 1:00 |
| Period Length | 4:00 |
| Outage Time | 10:00 |

| Day | Time | Feeder | Location | Load | Total | Outage Saving % |
|-----------|---------------|--------|---------------|------|-------|-----------------|
| Monday | 1:00 - 11:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| | | L53 | Parnassus | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Monday | 5:00 - 15:00 | K7 | Wetheral | 1.8 | 8.5 | 11.9% |
| | | S16 | Rangiora Bc | 3.2 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Monday | 9:00 - 19:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Monday | 13:00 - 23:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| | | W22 | Weka Pass | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | J77 | Leslie Hills | 0.2 | | |
| Monday | 17:00 - 3:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| | | L52 | Leader Rd | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | N34 | Argelins | 0.9 | | |
| Monday | 21:00 - 7:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| | | O76 | Oaro | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | N44 | Scarborough | 1.1 | | |
| Tuesday | 1:00 - 11:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| | | L51 | Claverley | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Tuesday | 5:00 - 15:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| | | L53 | Parnassus | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Tuesday | 9:00 - 19:00 | S16 | Rangiora Bc | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Tuesday | 13:00 - 23:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Tuesday | 17:00 - 3:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| | | W22 | Weka Pass | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | J77 | Leslie Hills | 0.2 | | |
| Tuesday | 21:00 - 7:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| | | L52 | Leader Rd | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | N34 | Argelins | 0.9 | | |
| Wednesday | 1:00 - 11:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| | | O76 | Oaro | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | N44 | Scarborough | 1.1 | | |
| Wednesday | 5:00 - 15:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| | | L51 | Claverley | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Wednesday | 9:00 - 19:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| | | L53 | Parnassus | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Wednesday | 13:00 - 23:00 | S16 | Rangiora Bc | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Wednesday | 17:00 - 3:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Wednesday | 21:00 - 7:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| | | W22 | Weka Pass | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | J77 | Leslie Hills | 0.2 | | |
| Thursday | 1:00 - 11:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| | | L52 | Leader Rd | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | N34 | Argelins | 0.9 | | |
| Thursday | 5:00 - 15:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| | | O76 | Oaro | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | N44 | Scarborough | 1.1 | | |
| Thursday | 9:00 - 19:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| | | L51 | Claverley | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Thursday | 13:00 - 23:00 | R47 | Loburn | 2.2 | 8.0 | 11.2% |
| | | S36 | South Belt | 1.9 | | |
| | | K15 | SW Kaiapoi | 1.5 | | |
| | | X48 | Burnt Hill | 0.9 | | |
| | | C20 | Summerhill | 0.5 | | |
| | | U26 | North | 0.7 | | |
| | | T41 | North | 0.3 | | |
| | | L53 | Parnassus | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Thursday | 17:00 - 3:00 | S16 | Rangiora Bc | 3.2 | 8.5 | 11.9% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Thursday | 21:00 - 7:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Friday | 1:00 - 11:00 | K4 | Ohoka Rd | 2.5 | 7.8 | 10.9% |
| | | K19 | SE Kaiapoi | 1.8 | | |
| | | P45 | Waiau | 1.0 | | |
| | | SW63 | South | 0.8 | | |
| | | SW65 | West | 0.4 | | |
| | | W23 | Mt Cass | 0.7 | | |
| | | Y43 | Broomfield | 0.3 | | |
| | | W22 | Weka Pass | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | J77 | Leslie Hills | 0.2 | | |
| Friday | 5:00 - 15:00 | K16 | NW Kaiapoi | 2.4 | 8.0 | 11.2% |
| | | R37 | West Belt | 1.7 | | |
| | | S33 | Fernside | 1.0 | | |
| | | SW62 | North | 0.7 | | |
| | | C40 | Springbank | 0.3 | | |
| | | H31 | Hawarden | 0.7 | | |
| | | T43 | South | 0.3 | | |
| | | L52 | Leader Rd | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | N34 | Argelins | 0.9 | | |
| Friday | 9:00 - 19:00 | S15 | Waikuku | 2.2 | 7.9 | 11.0% |
| | | K18 | NE Kaiapoi | 1.6 | | |
| | | P35 | Culverden | 0.9 | | |
| | | BN24 | Horriville | 0.6 | | |
| | | BN23 | Bennetts | 0.2 | | |
| | | U46 | Churchill Str | 0.8 | | |
| | | U36 | South | 0.4 | | |
| | | O76 | Oaro | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | N44 | Scarborough | 1.1 | | |
| Friday | 13:00 - 23:00 | S14 | Rangiora Ea | 3.5 | 7.7 | 10.8% |
| | | K1 | Camside | 1.6 | | |
| | | P25 | Balmoral | 0.9 | | |
| | | BN25 | Carleton | 0.5 | | |
| | | S35 | Rangiora W | 0.1 | | |
| | | T42 | Town | 0.7 | | |
| | | G33 | Scargill | 0.3 | | |
| | | L51 | Claverley | 0.1 | | |
| | | Nil | 0 | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| Friday | 17:00 - 3:00 | S16 | Rangiora Bc | 3.2 | 8.0 | 11.2% |
| | | K7 | Wetheral | 1.8 | | |
| | | S34 | West Belt | 1.4 | | |
| | | X38 | Ashley Gorg | 0.9 | | |
| | | C30 | West Eyretc | 0.4 | | |
| | | H21 | Waikari | 0.5 | | |
| | | H41 | Medbury | 0.2 | | |
| | | V75 | Claverley | 0.0 | | |
| | | Nil | 0 | 0.0 | | |
| | | E80 | Lochiel | 0.1 | | |
| Friday | 21:00 - 7:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | Clarkville | 1.8 | | |
| | | R27 | River Road | 1.1 | | |
| | | X28 | View Hill | 0.9 | | |
| | | SW64 | East | 0.4 | | |
| | | W21 | Omihi | 0.4 | | |
| | | G31 | Ethelton | 0.2 | | |
| | | G32 | Motunau | 0.2 | | |
| | | Nil | 0 | 0.0 | | |
| | | Q79 | Marble Point | 0.0 | | |
| Saturday | 1:00 - 11:00 | S13 | Flaxton Wod | 3.0 | 8.0 | 11.1% |
| | | K6 | | | | |