MainPower Participant Rolling Outage Plan (PROP)

Contents

1. Purpose

This plan is prepared in accordance with the System Operator Rolling Outage Plan (SOROP).

Under the Electricity Industry Participation Code, Participant Rolling Outage Plans (PROPs) are required to specify the actions that will be taken to reduce electricity consumption:

- when a supply shortage is declared by the System Operator;
- to comply with the requirements of SOROP and to supplement it.

Disconnecting supply to consumers is a measure of last resort, undertaken only after all other demand reduction options, including voluntary reductions, have been exhausted. MainPower will always endeavour to maintain electricity supply to consumers.

The procedures outlined in this plan relate primarily to major generation shortages, including dry year scenarios. In such circumstances, MainPower will disconnect consumers only when directed to do so by the System Operator.

2. Definitions

Term	Definition
AUFLS	Automatic Under Frequency Load Shedding
Code	Electricity Industry Participation Code
EDN	Electricity Distribution Network
Feeder	A high voltage circuit typically supplying up to 1,000 consumers
GXP	Transpower Grid Exit Point
CAN	Customer Advice Notice
GEN	Grid Emergency Notice
PROP	Participant Rolling Outage Plan (this plan)
Rolling Outages	Controlled reductions in demand or electricity consumption
SOROP	System Operator Rolling Outage Plan
Supply Shortage Declaration	A formal declaration, by the System Operator, that there is (or soon will be) insufficient electricity supply or transmission capacity, and the market alone can't balance supply and demand

3. Energy Shortage Events

Transpower, acting as the System Operator, ensures that sufficient energy and reserves are available to meet demand and maintain the stability of the national grid. This ability may be impacted by:

- Generation shortfall (due to low lake levels, calm winds, other fuel shortages)
- Failure of a large generator(s)
- Transmission circuit fault(s)

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

MainPower will act to support the System Operator to achieve their core outcomes.

3.1. Load Reduction by MainPower

MainPower can reduce load by turning off domestic water heaters, controlled non-residential load, and irrigation pumps in the Waimakariri, Hurunui, and Kaikoura regions. Further load reductions require MainPower to disconnect electricity consumers.

Table 1 – Event Categories

Developing Event (Category A):	Events that develop gradually. Ranging from low hydro lake levels to a shortage of generation offers for a trading period within the next 24 hours.
Immediate Event (Category B):	Events that occur suddenly with little or no warning, usually because of a transmission line or major generation asset failure.

4. Immediate Events (Category B)

The following table summarises the immediate actions to take if some form of rolling outage has occurred or is expected to occur.

Table 2 – Actions

Event	Immediate Action
Automatic Under Frequency Load Shedding (AUFLS) has occurred	Do not increase load or restore supply. Telephone the System Operator for further instructions.
Customer Advice Notice	Submit difference bids into WITS as required (currently done by Orion on behalf of the USI group)
Grid Emergency Notice – Request	1. Reduce load using hot water control. 2. If required, further reduce load using irrigation control, seek approval if time allows. 3. If time allows, contact large users and ask for voluntary reductions. Refer to Customer Management Guidelines for a list of customers to contact.
Grid Emergency Notice – Instruction	Reduce load to the instructed amount: ▪ Disconnect controlled hot water load (except preferential channels) ▪ Disconnect controlled irrigation load if required ▪ Disconnect customers starting with lowest priority (Appendix 2) ▪ Maintain AUFLS load at 16% per block ▪ Maintain maximum rate of change ≤ 5 MW/min unless otherwise approved In emergency situations, electricity consumers will be disconnected with limited or no notice to retailers or customers. If time allows, ask the Customer team to communicate with customers (per this plan).
Supply Shortage – Declared	Refer to Section 6 of this document for detailed procedure
Restoration Post Event	Take no action unless formally instructed by the System Operator

The following events can occur immediately. MainPower will become aware of these events through SCADA alarms or by near real time communications from Transpower.

4.1. Automatic Under Frequency Load Shedding (AUFLS)

Each distribution network company must maintain two blocks of load, each approximately 16% of its total load, to be shed by automatic under frequency relays. MainPower and Transpower have agreed to arm relays on selected feeders at the GXPs. These relays watch local grid frequency and automatically open the switchgear at pre-set points.

4.2. Supply Shortage Declaration

For some Immediate (Cat B) Events, the System Operator may declare a supply shortage and instruct rolling outages. In such a situation, the procedures for Developing (Cat A) Events will need to be implemented as per section 6.

4.3. Grid Emergency

The System Operator may request or instruct MainPower to reduce load under a Grid Emergency Notice (GEN). MainPower will shed water heating and then irrigation load if required, in the event of a Transpower Grid Emergency requesting voluntary load reductions. If this is unable to meet the target, further reductions may be instructed by the System Operator. MainPower will disconnect customers to meet load targets, only when instructed to.

4.4. Post-event 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. Developing Events (Category A)

If the System Operator requests a load reduction for a planned Developing (Cat A) Event, MainPower will reduce demand to meet the System Operator's targets. Voluntary energy savings from the consumers are the best solution wherever possible, this may not always occur. To reduce energy usage, MainPower may need to disconnect load in a controlled manner to enable targets to be reached. There may be financial penalties for not meeting the targets specified by the System Operator.

5.1. Energy Savings and Load Control

Water heating load is not a viable option for energy savings as this only defers usage and would not save energy. Leaving water heating channels off for extended periods risks public health. Shedding irrigation load is not desirable; the irrigation load should be managed as part of wider rolling outages.

5.2. Declaration of a Developing (Cat A) Event

To declare a Developing (Cat A) Event, the System Operator will issue a specific weekly energy savings target, with as much notice as possible. MainPower (Head of Asset Management & Operations) must acknowledge receipt of this direction by email to the System Operator
System.Operator@transpower.co.nz

MainPower will use the standard planned outage notification procedure to energy retailers. Any increase in the weekly energy savings target would also need nine days prior notice.

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

5.3. Criteria for Rolling Outages

To ensure we act in the public interest, the following table shows regulatory criteria for selecting feeders to be included in rolling outages. Feeders should be disconnected in this order.

Table 3 – MainPower Priority Loads

Priority	Priority Concern	Maintain Supply to:
1	Public health and safety	Major hospitals, air traffic control centres, and emergency operation centres.
2	Maintaining important public services	Lifelines infrastructure, e.g., energy control centres, communication networks, water and sewage pumping, fuel delivery systems, major ports, public passenger transport, major supermarkets.
3	Public health and safety	Vulnerable sectors e.g., rest homes, prisons, medical centres, schools, street lighting.
4	Animal health, food production / storage	Dairy farms, milk production facilities, chicken sheds, cool stores.
5	Maintaining production	Central business districts, commercial and industrial premises.
6	Disruption to households	Residential premises.

These priorities are intended as guidelines, and do not prevent MainPower from making pragmatic decisions. Priorities in this table are based on information provided by Transpower System Operator Rolling Outage Plan, which in turn references section 13 of the National Civil Defence Emergency Management Plan 2015.

5.4. AUFLS Under Rolling Outages

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

MainPower will include AUFLS feeders in shedding but limit the shedding to ensure the AUFLS blocks remain at 16% i.e., if MainPower sheds 20% of total load, then approximately 20% of the AUFLS feeder load would also be shed.

AUFLS feeders are low priority loads. If rolling outages are certain to continue for an extended period, then MainPower will ask Transpower 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 complex and time-consuming. Protection changes are required. Changes to AULFS feeders will require considerable notice to Transpower and will be subject to workload.

5.5. 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 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.

5.6. Supply Restoration

Disconnected load from Immediate (Cat B) or Developing (Cat A) Events must be restored in conjunction with the System Operator to minimise the impact of frequency and voltage instability. MainPower will:

- Not increase or decrease demand by more than 25MW in any five-minute period without the system operators prior approval
- Minimise disconnection and restoration when the region affected by the supply shortage is ramping load
- Minimise the impact on frequency and voltage stability

6. Communication and Retailer Notifications

6.1. Public and Media Communications

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 communications procedure, led by the General Manager Customer and Corporate Relations.

6.2. Retailer Notifications

Energy Retailers will be responsible for consumer notification, via the normal notification process. MainPower will notify the electricity retailers whenever possible.

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

6.3. System Operator Communications

All communications with the System Operator will be between MainPower's Control Room in Rangiora or via standard telecommunication systems to NGOC. MainPower will give acknowledgement of receipt of direction to Transpower.

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

6.4. Escalation and Key Contacts

MainPower key contacts are available in the Electricity Industry Emergency Contacts List (EIECL), which should be contacted by phone whenever urgent. The following is the escalation structure for MainPower Network Operations.

1. MainPower Control Room
2. Head of Asset Management & Operations
3. General Manager Network Operations

All matters regarding near real-time network operations must be directed to the MainPower Control Room:

Phone: (03) 311 8312
Email: Controlroom_mail_group@mainpower.co.nz

Upcoming supply shortages, supply shortage declarations, and other managements matters should be directed to the Head of Asset Management & Operations or General Manager Network Operations, current details per EIECL.

6.5. Third Party Agreements

No retailer agreements, consumer agreements, or interruptible load agreements prevent MainPower from meeting obligations under this plan.

7. Rolling Outage Procedure

7.1. Responsibilities

The Control Room:

1. Receive instructions to reduce demand from the System Operator, advise the NOCC Manager
2. Plan rolling outages by creating outage schedules, following the feeder priority list to the greatest extent possible (Schedule 1)
3. Send schedules of estimated load shedding, restoration times and quantities to the System Operator seven days before the planned outage, unless the outages are short notice (Cat B).
4. Advise the System Operator if significant variation to the schedules is expected.
5. Advise Retailers of the outages, using the normal process, if time allows. Or alternatively, advise the General Manager of Customer and Corporate Relations.

Head of Asset Management & Operations:

1. Load shedding schedules are prepared
2. Network Controller rosters are adjusted as required
3. Load is controlled and monitored to meet desired targets
4. The System Operator is kept informed of energy savings compared to targets, including the extent and nature of rolling outages.
5. The business is kept informed, as agreed with the General Managers

Customer and Corporate Relations:

1. Notify & communicate with public agencies & media (if required).
2. Ensure the outages are publicised.
3. Liaise with Transpower Customer relations team for overall timeframes, messaging and customer communications.

7.2. Feeder Selection

The feeders which experience rolling outages will depend on the level of savings required.

MainPower is required to demonstrate that a 25% saving can be achieved, by the System Operator Participant Rolling Outage Plan. To achieve this level of energy savings, it is necessary to target feeders in priority groups 1 through 6, to ensure that no single group goes without power for more than 50% of the time, noting that priority two feeders include water and/or sewerage pumping.

It is necessary to avoid certain feeders due to AUFLS requirements, so selected Priority 2 feeders do not experience outages on every occasion. The outages would be rotated within the subgroup, by day. If total energy savings are achieved for each priority group, MainPower may choose to implement more cuts per week at a shorter duration. These detailed plans would be developed as part of the load shedding schedules once the request was received and communicated to customers.

The composition of different loads on each MainPower feeder means that load shedding will not align perfectly with the priorities, because most feeders have a mix of load types. We will align to the greatest possible extent practical, without switching subcircuits unless a special case arises.

The feeder priorities presented in Table 3 reflect the load breakdown shown in Table 4, based on a weighted aggregation of ICP priority classifications rather than a single highest-priority assignment. This approach produces an overall feeder priority score that better represents the distribution of critical and non-critical load across each feeder, reducing the bias previously introduced by isolated high-priority customers (e.g. water and sewerage pumping loads).

Table 4 – Energy Saving Plans

5% Savings plan				10% Savings plan			
Group Priority	Cuts per week	Cut Duration (hours)	Weekly Savings (MWh)	Group Priority	Cuts per week	Cut Duration (hours)	Weekly Savings (MWh)
1			0	1			0
2			0	2			0
3			0	3	7	2	49
4	7	2	347	4	7	4	694
5	7	3	281	5	7	4	375
6	7	4	196	6	7	5	245
			824				1363
Average weekly winter volume			13,147	Average weekly winter volume			13,147
Estimated percentage savings			6%	Estimated percentage savings			10%

15% Savings plan				20% Savings plan			
Group Priority	Cuts per week	Cut Duration (hours)	Weekly Savings (MWh)	Group Priority	Cuts per week	Cut Duration (hours)	Weekly Savings (MWh)
1			0	1			0
2	7	2	170	2	7	2	170
3	7	3	74	3	7	6	147
4	7	5	868	4	7	7	1215
5	7	6	562	5	7	7	656
6	7	7	343	6	7	8	392
			2016				2579
Average weekly winter volume			13,147	Average weekly winter volume			13,147
Estimated percentage savings			15%	Estimated percentage savings			20%

25% Savings plan			
Group Priority	Cuts per week	Cut Duration (hours)	Weekly Savings (MWh)
1	7	1	109
2	7	4	339
3	7	8	196
4	7	8	1388
5	7	8	749
6	7	8	392
			3174
Average weekly winter volume			13,147
Estimated percentage savings			24%

Table 5 – Load breakdown from MainPower feeder priority

Priority	Average Winter Load (MW)	Percentage of Total Load
1	24.11	30.9%
2	40.18	51.6%
3	9.05	11.6%
4*	0.00	0.0%
5	4.58	5.9%
6*	0.00	0.0%

*Priority 4 and 6 feeders currently have no feeders assigned.

7.3. Contingent Events

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

8. Transpower management framework

8.1. Emergency Demand Management Framework for GXPs

This section outlines the framework under which MainPower GXP-connected HV feeders may be utilised for emergency demand management during extreme grid events initiated by the System Operator (NGOC).

The Transpower GXP Feeder Priority Table provided in Appendix 2 defines the priority order for feeder disconnection where rapid demand reduction is required to maintain transmission system security, voltage, or frequency stability. This appendix supports time-critical operational decision-making and is intended for use only during declared grid emergency conditions.

The feeder priority order in Appendix 2 is separate from the Participant Rolling Outage Plan (PROP) and does not apply to non-emergency or rotational outage scenarios.

8.2. Operating Principles for Transpower GXP Priority table (Appendix 2).

- Lower priority number = feeder shed earlier
- Higher priority number = feeder retained longer
- Feeders are listed at GXP level only
- All feeders are SCADA-visible, in service, and correctly named

The following GXPs will experience rolling outages:

1. Southbrook
2. Kaiapoi
3. Waipara
4. Culverden
5. Ashley

Appendix 1 – Main Power Feeder Table

				Season					
				Shoulder		Summer		Winter	
HV feeder	PROP Feeder Priority	GXP	AUFLS	Average load (MW)	Percent total load (%)	Average load (MW)	Percent total load (%)	Average load (MW)	Percent total load (%)
E80	6	CUL0331	2	0.03	0.05%	0.01	0.02%	0.05	0.06%
K33	6	KAI0111		0.18	0.26%	0.13	0.18%	0.24	0.30%
L52	6	WPR0661	1	0.06	0.09%	0.05	0.07%	0.08	0.10%
SB1132	6	SBK0661		0.10	0.14%	0.06	0.08%	0.09	0.12%
SB1162	6	SBK0661		0.61	0.86%	0.52	0.72%	0.83	1.04%
X53	6	SBK0661		0.55	0.78%	1.14	1.56%	0.27	0.34%
X55	6	SBK0661		0.85	1.20%	1.53	2.10%	0.35	0.44%
X57	6	SBK0661		0.51	0.72%	0.87	1.20%	0.32	0.40%
SB1072	6	SBK0661		0.67	0.95%	0.53	0.73%	0.73	0.92%
X56	6	SBK0661		0.39	0.55%	0.77	1.05%	0.28	0.35%
AB1052	6	WPR0331		0.44	0.62%	0.28	0.38%	0.49	0.62%
ASY_2752	6	ASY0111	1	0.08	0.11%	0.01	0.02%	0.05	0.06%
ASY_2712	5	ASY0111	1	0.51	0.72%	0.49	0.68%	0.62	0.78%
G33	5	WPR0661	1	0.21	0.30%	0.17	0.24%	0.22	0.27%
KAI_1	5	KAI0111		1.02	1.43%	0.92	1.26%	1.24	1.56%
KAI_7	5	KAI0111		1.79	2.53%	1.55	2.12%	2.37	2.97%
KAI_24	5	KAI0111		0.35	0.49%	0.30	0.41%	0.50	0.63%
L53	5	WPR0661	1	0.29	0.41%	0.52	0.71%	0.12	0.15%
S33	5	SBK0661		0.23	0.33%	0.17	0.24%	0.27	0.34%
S34	5	SBK0661		1.18	1.67%	0.92	1.26%	1.59	1.99%
S35	5	SBK0661		1.01	1.43%	0.73	1.00%	1.39	1.75%

S36	5	SBK0661		1.27	1.79%	0.97	1.33%	1.66	2.09%
SW63	5	SBK0661		1.40	1.97%	2.38	3.27%	0.99	1.25%
SW64	5	SBK0661		1.51	2.13%	1.58	2.17%	1.88	2.37%
T41	5	WPR0661	1	0.32	0.45%	0.53	0.72%	0.27	0.34%
W21	5	WPR0661	1	0.27	0.38%	0.31	0.42%	0.31	0.39%
W22	5	WPR0661	1	0.16	0.23%	0.23	0.31%	0.16	0.20%
K16	5	KAI0111		1.09	1.54%	0.88	1.21%	1.48	1.86%
K36	5	KAI0111		0.43	0.61%	0.35	0.48%	0.56	0.70%
KAI_4	5	KAI0111		2.67	3.77%	2.50	3.42%	3.16	3.97%
G32	4	WPR0661	1	0.16	0.22%	0.14	0.19%	0.19	0.23%
H21	4	WPR0331	1	0.25	0.36%	0.26	0.36%	0.34	0.42%
H41	4	WPR0331	1	0.50	0.70%	1.23	1.69%	0.35	0.44%
K15	4	KAI0111		0.68	0.96%	0.54	0.74%	0.89	1.12%
K19	4	KAI0111		1.16	1.63%	0.99	1.36%	1.32	1.66%
K37	4	KAI0111		1.54	2.18%	1.14	1.57%	2.12	2.67%
L51	4	WPR0661	1	0.12	0.17%	0.10	0.14%	0.14	0.18%
N34	4	CUL0331	2	0.75	1.06%	0.59	0.81%	0.98	1.23%
N44	4	CUL0331	2	1.00	1.41%	0.93	1.27%	1.23	1.54%
P25	4	CUL0331		1.18	1.66%	1.94	2.66%	0.61	0.77%
SB1152	4	SBK0661		1.60	2.26%	1.19	1.63%	2.23	2.81%
SW65	4	SBK0661		0.83	1.17%	1.16	1.59%	0.78	0.98%
SW66	4	SBK0661		1.68	2.38%	2.62	3.60%	1.56	1.97%
T43	4	WPR0661	1	0.39	0.55%	0.58	0.79%	0.37	0.46%
X52	4	SBK0661		1.06	1.50%	1.65	2.26%	0.75	0.95%
G31	4	WPR0661	1	0.30	0.42%	0.34	0.47%	0.28	0.36%
K35	4	KAI0111		1.73	2.44%	1.39	1.90%	2.25	2.83%

SW62	4	SBK0661		1.24	1.75%	1.44	1.97%	1.39	1.75%
P55	4	CUL0331		0.68	0.96%	1.48	2.04%	0.46	0.58%
AB1102	4	WPR0331		0.36	0.51%	0.26	0.36%	0.39	0.49%
ASY_2692	3	ASY0111	1	0.88	1.24%	0.69	0.95%	1.01	1.27%
H31	3	WPR0331	1	0.48	0.68%	0.69	0.95%	0.59	0.74%
K18	3	KAI0111		0.99	1.39%	0.75	1.03%	1.26	1.59%
P35	3	CUL0331		1.38	1.95%	2.11	2.90%	0.85	1.07%
T42	3	WPR0661	1	0.39	0.56%	0.30	0.41%	0.50	0.63%
KAI_5	3	KAI0111		0.71	1.00%	0.76	1.04%	0.80	1.00%
U92	3	CUL0661		0.45	0.63%	0.54	0.74%	0.39	0.49%
ASY_2762	2	ASY0111		1.16	1.64%	1.21	1.65%	1.33	1.68%
ASY_2672	2	ASY0111	1	5.09	7.19%	5.00	6.85%	5.14	6.46%
ASY_2772	2	ASY0111	1	1.35	1.91%	1.22	1.67%	1.83	2.30%
KAI_6	2	KAI0111		1.51	2.12%	1.35	1.85%	1.90	2.38%
P45	2	CUL0331		1.36	1.93%	2.27	3.11%	0.88	1.11%
SB1042	2	SBK0661		0.51	0.71%	0.42	0.58%	0.61	0.76%
U42	2	CUL0661		0.83	1.16%	0.85	1.16%	0.81	1.02%
AB1042	2	WPR0331		0.95	1.34%	0.68	0.94%	1.07	1.34%
SB1052	1	SBK0661		1.83	2.59%	1.60	2.19%	2.24	2.81%
SB1062	1	SBK0661		2.12	3.00%	1.75	2.40%	2.81	3.54%
SB1082	1	SBK0661		0.51	0.72%	0.41	0.56%	0.66	0.83%
SB1142	1	SBK0661		2.09	2.95%	1.68	2.30%	2.87	3.61%
SB1172	1	SBK0661		2.35	3.31%	1.96	2.69%	2.96	3.72%
U32	1	CUL0661		0.80	1.13%	0.70	0.96%	0.95	1.19%
U82	1	CUL0661		1.18	1.67%	1.12	1.54%	1.25	1.57%
W23	1	WPR0661	1	-1.25	-1.77%	-1.29	-1.77%	-1.47	-1.84%

X54	1	SBK0661		1.98	2.80%	1.75	2.41%	2.33	2.93%
AB1112	1	WPR0331		1.38	1.94%	0.95	1.30%	1.51	1.90%
Y43		WPR0331		0.56	0.79%	0.48	0.66%	0.75	0.95%
Y23		WPR0331		0.79	1.11%	0.64	0.87%	1.07	1.35%
Y33		WPR0331		1.07	1.51%	0.95	1.30%	1.42	1.79%
Grand Total				70.87	100.00%	72.94	100.00%	79.52	100.00%

Appendix 2 – Transpower GXP Priority feeder Table

3.12.5.1 Single GXP – Waipara

Company	GXP	Feeder or GXP Incomer	Feeders to be Opened Simultaneously	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
MainPower NZ	Waipara	1132 (Hawarden)		X				
		1172 (Amberley)			X			
		82 (Cheviot)				X		
% Load estimated				18	62	20		

3.12.5.2 Single GXP – Culverden

Company	GXP	Feeder or GXP Incomer	Feeders to be Opened Simultaneously	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
MainPower NZ	Culverden	1222 (Mouse Point)		X				
		1242 (Hanmer)			X			
		142 (Kaikoura)				X		
% Load estimated				65	15	20		

3.12.5.3 Single GXP – Ashley

Company	GXP	Feeder or GXP Incomer	Feeders to be Opened Simultaneously	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
MainPower NZ	Ashley MPNZ	2692 (Beatties Road North)		X				
		2702 (Amberley Step Tx)						X
		2712 (Sefton)			X			
		2752 (Ravenswood)				X		
		2762 (Beatties Road South)					X	
		2772 (Ashley)						X
	Ashley Daiken	2642 (CHH East)		X				
		2682 (CHH West)			X			

		2622 (CHH Central 1)	X			X		
		2662 (CHH Central 2)	X			X		
% Load estimated				18	30	22	18	12

3.12.5.4 Single GXP – Southbrook

Company	GXP	Feeder or GXP Incomer	Feeders to be Opened Simultaneously	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
MainPower NZ	Southbrook	152 (Burnt Hill)		X				
		202 (Swannanoa)			X			
		42 (Southbrook ZS)	X			X		
		82 (Southbrook ZS)	X			X		
% Load estimated				12	10	78		

3.12.5.5 Single GXP – Kaiapoi

Company	GXP	Feeder or GXP Incomer	Feeders to be Opened Simultaneously	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
MainPower NZ	Kaiapoi	1 (Tuahiwi)		X				
		2 (S1 Fuller)	X					X
		3 (S1 Hilton)	X					X
		4 (Ohoka Road)					X	
		5 (Clarkville)				X		
		6 (Ohoka)			X			
		7 (Tram Road)			X			
		24 (Silverstream)		X				
		2822 (Kaiapoi North 1)	X				X	
		2832 (Kaiapoi North 1))	X				X	
% Load estimated				12	8	13	37	30

3.12.5.6 Across All GXP's

Company	GXP	Feeder or GXP Incomer	Feeders to be Opened Simultaneously	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
MainPower NZ	Waipara	1132 (Hawarden)		X				
	Culverden	1222 (Mouse Point)			X			
	Ashley	2692 (Beatties Road North)				X		
	Southbrook	152 (Burnt Hill)		X				
		202 (Swannanoa)			X			
	Kaiapoi	1 (Tuahiwi)				X		
		6 (Ohoka)					X	
		7 (Tram Road)						X
% Load estimated				12	20	6	3	3