Winstone Pulp International
Karioi Site

Participant Rolling Outage Plan

Full Information Plan
September 2023

Contents

Definitions

AUFLS	Automatic Under Frequency Load Shedding
Authority	The Electricity Authority
Code	The Electricity Industry Participation Code 2010
Developing Event	An event that evolves over time, e.g., as the result of a period of unseasonably low inflows to hydro catchments
EMP	The System Operators Emergency Management Policy. Current version effective from 1st December 2022
ER	Extended Reserves - replacement regime for AUFLS utilising a market like approach.
GXP	Transpower Grid Exit Point at which the WPI Karioi Pulpmill load is connected
GEN	Grid Emergency Notice
Immediate event	An event that occurs with little or no warning, e.g., as a result of a transmission or major power station failure
IL	Interruptible Load –demand side IR
IR	Instantaneous Reserve including FIR and SIR
PROP	Participant Rolling Outage Plan (this plan)
Rolling Outages	Planned electricity disconnections spread over different parts of the electricity system at differing times to avoid prolonged outages at any one location.
SOROP	System Operator Rolling Outage Plan
Supply shortage declaration	Declaration made by the System Operator under Clause 9 sub part 2 of the Code.
System Operator	Operator of the national electricity transmission grid (Part of Transpower)
Transpower	Transpower New Zealand Limited

Transmission line	A high voltage supply line owned and operated by Transpower New Zealand Limited
WPI	Winstone Pulp International Limited

Associated documents

1. Emergency Management Policy (EMP) published by the System Operator and effective from 1st December 2022
2. System Operator Rolling Outage Plan (SOROP)- published by the System Operator and effective from the 19th of June 2016
3. Updating Participant Rolling Outage Plans (Version 2) published by the System Operator in September 2021
4. Winstone Pulp International operational procedures

Purpose of this plan

5. Part 9 of the Electricity Industry Participation Code (the Code) relates to security of supply and includes provisions relating to the System Operator rolling outage plan (SOROP) and participant rolling outage plans (PROPs).

6. This plan was written to satisfy the requirements of the Code that relate to PROPs. Clause 9.8 of the Code requires that each PROP must:

   a) be consistent with the System Operator rolling outage plan; and

   b) comply with the requirements specified in the notice sent under clause 9.6(2)(a); and

   c) specify the actions that the specified participant will take to achieve, or contribute to achieving, reductions in the consumption of electricity (including any target level of reduction of consumption of electricity in accordance with criteria, methodologies, and principles specified in the System Operator rolling outage plan) to comply with a direction from the System Operator given under clause 9.15.

7. This PROP covers the following site:

Site name	Physical location	GXP
WPI	Karioi Pulpmill, Ohakune	TNG0111

8. This PROP provides details of how Winstone Pulp International (WPI) will respond to a supply shortage declaration issued by the System Operator and how the System Operator should communicate any requests for reductions in demand.

9. The outage plan provides details of the main energy saving measures that can be called on and how these are structured and implemented.

Supply shortage declaration

10. Part 9 Sub part 2 of the Code sets out how supply shortage situations will be managed.

11. Under the provisions of the Code the System Operator has powers to direct outages following a supply shortage declaration. As a specified participant WPI must comply with any direction given by the System Operator following a supply shortage declaration.

12. A supply shortage declaration may apply to:

    a) All of New Zealand; or

    b) Regions specified in the declaration.

13. When a supply security declaration is made WPI must comply with a direction given by the System Operator in accordance with this PROP.

14. The System Operator may, at any time in the period during which a supply shortage declaration is in force, direct WPI to contribute to achieving reductions in the consumption of electricity by implementing outages or taking any other action specified in the direction.

15. A direction may be communicated through the information system operated by the System Operator.

16. The System Operator will notify WPI when a supply shortage declaration has been revoked.

17. This PROP sets out the actions that WPI will take, who is responsible for implementing the actions and how communications will be managed between WPI and the System Operator.

Background

The Electricity Authority

18. The Electricity Authority (Authority) is an independent Crown entity responsible for regulating the New Zealand electricity market. The Authority's objective is to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.

19. The core functions of the Authority are to:

    a) make and administer the Electricity Industry Participation Code 2010 (Code) governing the New Zealand electricity market;

    b) undertake market-facilitation measures (such as providing education, guidelines, information, and model arrangements) and monitor the operation and effectiveness of market- facilitation measures;

    c) monitor and enforce compliance with the Code, various regulations, and the Act;

    d) proactively monitor the performance of the electricity industry in regard to competition, reliable supply and efficient operation; and

    e) contract service providers to operate the New Zealand electricity system and market in accordance with the Code.

Transpower

20. Transpower is a State Owned Enterprise, tasked with owning and operating New Zealand's National Grid - the network of high voltage transmission lines and substations that transports bulk electricity from where it is generated to distribution line companies and directly (grid) connected major electricity consumers.

System Operator

21. As System Operator, Transpower manages the real-time operation of New Zealand's electricity transmission system by matching supply (generation dispatch) with demand.

Winstone Pulp International

22. WPI is a New Zealand based subsidiary of Ernslaw One Ltd, the fourth largest forestry owner in New Zealand. WPI produces a range of wood pulp and timber products for both New Zealand (logs and sawn timber) and international markets (logs, sawn timber and pulp).

23. WPI sells its products into very competitive international markets. Product quality, price and meeting customer delivery requirements are paramount to maintaining a viable wood processing business in New Zealand.

24. WPI operates the pulp mill and associated sawmill at Karioi, near Ohakune, in the central North Island of New Zealand. This is WPI's sole wood processing facility and electricity is a key input into the mill's operation.

The supply quality, reliability and price paid for electricity impacts significantly on the company's bottom line performance.

25. Production of mechanical wood pulp is WPI’s most energy intensive operation. In particular, the refining of wood chip consumes approximately 65% of the site’s usage.

26. WPI contracts directly with Transpower for transmission services. WPI is an electricity market direct participant as defined in the Electricity Industry Participation Code, consuming approximately 230 GWh electricity pa and is a Distributor in terms of the AUFLS obligations in the Code. WPI also provides Interruptible Load (IL) for the Ancillary Services Market.

Security of supply events covered by this plan

27. In its Operator Rolling Outage Plan (SOROP) the System Operator provides the steps that the System Operator will take and the circumstances that will need to exist for a supply security declaration (Extended Emergency Events) to be made. Those steps provide for a series of last resort emergency measures, which would not be implemented unless there was a significant risk that it would not be possible to meet the demand for electricity on a sustained basis.

28. Extended Emergency Events are events that are expected to last for at least one week and typically for several weeks as a result of an extended period of extremely low inflows to hydro catchments, a major asset outage that is expected to be sustained for a longer period, or some combination of these events.

29. The SOROP describes the two ends of the spectrum of possible Extended Emergency Events that could lead the System Operator to make a supply shortage declaration these are:

- **Developing Event** – Events that evolve over time – for example as the result of a period of unseasonably low inflows to hydro catchments; and
- **Immediate Events** –. Events that occur with little or no warning – for example as a result of a transmission or major power station failure, the impact of which are expected to extend over a period of weeks rather than days.

30. Rolling outages under a supply shortage declaration are a last resort measure the System Operator may initiate, after consultation with the Authority, only if there is a shortage of electricity supply (generation) or transmission capacity if the System Operator considers:

a) that the normal operation of the wholesale market is, or will soon be, unlikely to facilitate the adjustment of supply and demand necessary to ensure that supply matches demand; and

b) that, if planned outages are not implemented, unplanned outages are more likely than not.

Full information and partial information PROPS

31. The System Operator Rolling Outage Plan (SOROP) sets out the following requirements for direct connect PROPs.

> ***Full information plans****: These plans must contain sufficient information for the system operator to make a decision on the most appropriate savings target for the direct-connect user.*
>
> *A direct-connect user's full information plan must inform the system operator about:*

- *the nature of the load on site;*
- *whether any load is used to provide other services to the electricity sector such as interruptible load;*
- *the extent to which different levels of savings can be achieved;*
- *the nature of the measures that could be implemented; and*
- *the cost associated with different levels of savings.*

***Partial information plans**: These plans may contain some of the information required for full information plans. If the system operator sets a savings target for a region where there is a direct-connect user with a partial information plan, their savings target will likely be set to achieve the same percentage saving as distribution companies in that region.*

What this PROP contains

32. This PROP includes procedures for managing both developing and immediate category of event.

Section	Content
Communications	Contact details for communications during a supply shortage declaration
Description of Load	A description of the WPI load
Site response	How the site will respond to different types of event including a plan of possible savings
Coordination with the system operator	Sets out how WPI will coordinate with the system operator
Monitoring and reporting	How WPI will monitor and report savings made

33. This PROP contains all the information required for **Full Information Plan**.

Communications

All urgent operational communications should, in the first instance, be made to:

Contact: WPI control Room
Phone: 06 385 8545 EXT 854

The WPI Control Room will communicate with the System Operator for operational communications using the following details:

Transpower National Control Centre
Phone: 0800 488 500 or 07 590 8100
Email: nmdata@transpower.co.nz

Communications from the System Operator about a supply shortage declaration should be made to:

Contact: Pulpmill Site Operations Manager
Phone: 06 385 8545, extension 844
Mobile: 021 209 0754
Email: stuart.gibson@wpinz.com

If unable to be contacted, then contact:

Contact: WPI Control Room
Phone: 06 385 8545 EXT 854

The WPI person responsible for reporting to the System Operator on performance against savings targets is:

Contact: Pulpmill Site Operations Manager
Phone: 06 385 8545, extension 844
Mobile: 021 209 0754
Email: stuart.gibson@wpinz.com

The relevant people in the above positions will communicate with the System Operator for administration and reporting against targets using the following details:

System Operator
Transpower, Waikoukou, 22 Boulcott Street
PO Box 1021, Wellington, 3215
Telephone: 64 4 590 7000
Email: system.operator@transpower.co.nz

The WPI person who is responsible for communicating with the media (if required) is:

Contact: Chief Executive Officer
Phone: 09 306 0680
Mobile: 021 763 502
Email: mike.ryan@wpinz.com

Description of site load

34. The Site operates continuously 24 X 7 with relatively constant electricity demand except when some or all of the mill is off because of a planned or unplanned outage. The average electrical loading of the Site is typically approximately 28MW. This load is made up of the following activities:

<table>
<tr><td>Refining plant</td><td>The refining plant consists of two primary refiners each drawing approximately 7MW at full load and two secondary refiners together drawing an additional 6 MW.

The approximate combined average electrical load of the refining plant is 18MW to 23MW depending on the grade of pulp being produced.

Periodically one primary refiner is temporarily shut down for 6 to 8 hours to change out wear parts and during this period the refining electricity load approximately halves.

Over the last few years WPI has implemented a number of energy efficiency projects that have reduced refining power demand by approximately 30%. Further temporary reduction by way of emergency conservation measures would not produce any significant saving.</td></tr>
<tr><td>Chip preparation</td><td rowspan="6">The approximate average total loading of these ancillary processes is 11MW.

Most of this balance of plant must run when the refining plant is in operation. The exceptions are the log chipping plant and sawmill (excluding timber drying kilns) which typically operate 10 to 12 hours per day.</td></tr>
<tr><td>Chipping</td></tr>
<tr><td>Bleach plant</td></tr>
<tr><td>De-watering and drying</td></tr>
<tr><td>Packaging</td></tr>
<tr><td>Sawmill</td></tr>
</table>

35. To some extent the refining electrical loading can be reduced by decreasing the rate of wood chip feed into the refining process. A decrease of approximately 20% is possible before the refining process is adversely affected.

36. The refining load is also offered as Interruptible Load (IL for FIR and SIR in the IR market) at quantities varying from zero to 17MW (FIR) and zero to 20MW (SIR). The revenue received from the provision of Instantaneous Reserves provides limited cost recovery during times of high wholesale energy spot prices. The ancillary loads are not suitable for Instantaneous Reserves.

37. The refiner loads are price responsive and may be shut down for a short period (typically only one or two trading periods) in the event that the

wholesale electricity spot price reaches levels that makes production commercially unsustainable.

38. Under the AUFLS regime, WPI currently has an approved equivalence arrangement for AUFLS obligations. Under the future 4-block AUFLS WPI will also provide load blocks that will automatically disconnect part of the site load if an emergency underfrequency event is detected at the GXP. This obligation does not affect WPI's ability to offer IL, and it should not affect WPI's ability to provide sustained energy savings under this plan.

How WPI will respond to different types of event

Immediate & Developing Event

39. The System Operator is responsible for making a supply shortage declaration and for directing WPI to implement rolling outage savings. Communication of such a direction to WPI to reduce demand should be given to the following person.

Contact:	Pulpmill Site Operations Manager
Phone:	06 385 8545, extension 844
Mobile:	021 209 0754
Email:	stuart.gibson@wpinz.com

Emails should also be copied to andy.chamley@wpinz.com

If the System Operator's email direction to save energy or reduce demand is received by WPI during normal business hours, WPI will acknowledge receipt by return email. If it is sent by the System Operator outside normal business hours, the System Operator should also contact the Pulpmill Site Operations Manager by phone.

If unable to be contacted, then contact:

Contact:	WPI Control Room
Phone:	06 385 8545 EXT 854

40. The above person has the authority to make demand reductions and is responsible for coordinating emergency demand response at WPI and communicating with the System Operator when a directive is in force.

41. Any load that has already been reduced due to a Grid Emergency notification will be considered to have contributed towards the requested savings under a Directive.

42. Any load that is included in the response to a direction will not be offered as Instantaneous Reserves until the direction has ceased to have effect. It should be noted that there may be a delay in responding to a direction due to the time needed to withdraw load from the Instantaneous Reserves market.

43. Following receipt of a direction WPI will, as soon as reasonably possible, issue a directive to all staff to reduce all discretionary electricity use. Discretionary means electricity use that does not impact on production and the health and safety of people and security of the site.

44. If further reductions are necessary to meet the direction WPI will implement the savings plan set out in the following section.

Savings Plan

Conservation

45. All WPI staff will be contacted by email and asked to implement a reduction in discretionary electricity use that does not impact on production and the health and safety of people and security of the site. Because almost all of WPI's electricity load is related to the core pulp production, savings from this measure would be at most only one or two percent.

46. It is possible that that refiner load will have already been reduced in response to high wholesale electricity spot prices. If the required percentage savings has already been achieved through reductions in response to spot prices, no further savings measures may need to be taken.

47. If the refiner loading has not already responded to spot prices and further reductions are required to meet the System Operator's directive, then the following additional savings measures can be taken.

Reducing production rate

48. Reducing refining chip feed rates or intermittent operation of some of the refining plant units will allow overall reduction of site electricity use by a variable amount, up to approximately 12% or 600MWh per week.

49. The cost incurred by WPI in reducing the production rate will depend on the business conditions at the time and are most sensitive to international pulp prices, pulp freight costs, currency exchange rates and raw wood costs. Based on the range of prices and costs of these variables over the last 5 years, the cost of this curtailment to WPI is likely to be in the range $200/MWh to $550/MWh. Under a Developing Event, should WPI be contacted by the System Operator to reduce load, WPI can provide up-to-date $/MWh cost and production status information on a confidential basis. If WPI has already reduced load due to high spot prices, or due to an IR, or an ER event when contacted by the System Operator, then this reduction will form part of the response to the total reduction requested.

Rolling Refining Plant outage

50. To achieve additional electricity savings of more than 12% and up to 25%: one of the two primary refiners and associated secondary refining plant will need to be shut down for up to half of the time during the Event period. This will reduce site electricity usage by a variable amount, up to a further 660MWh per week.

51. During this period WPI would need to cycle the refiner duties so as to avoid a sustained outage on any single machine because a sustained outage can result in accelerated maintenance requirements and poor reliability in the subsequent time period after the outage. Notwithstanding these precautionary measures some loss of operational efficiency will result in the downstream pulp screening, bleaching, dewatering and drying processes.

52. Except as noted below, the cost incurred by WPI in implementing rolling outages will be similar to that for reducing the production rate (as in

paragraph 49 above), plus an additional loss of efficiency resulting from cycling the refining plant operation. WPI estimate this loss of efficiency relating to increase specific energy consumption per tonne of pulp and variable product quality would add approximately 30% to the WPI's cost per MWh of curtailment. The cost to WPI of this additional curtailment is therefore likely to be in the range $260/MWh to $715/MWh of savings.

53. In the event that this level of savings is required over more than say two weeks, WPI's annual production will be materially reduced and this could impact on WPI's ability to meet its sales contract obligations and seriously damage WPI's reputation in the market. These potential costs to WPI could be very significant however they are not quantifiable prior to the event.

Grid Emergencies

54. In the event that a Grid Emergency is coincident with a request for savings under this PROP it is assumed that the Grid Emergency requirements made by the System Operator will take precedence over this PROP. The level of savings available under this PROP will, therefore, be reduced by the level of any load reductions made in response to a Grid Emergency.

55. Once a Grid Emergency has ceased the load savings levels provided under this PROP will be recommenced.

Disconnecting and Restoring Load

56. WPI's procedure for disconnecting and restoring load during periods of rolling outages, and the associated effects on power quality, will be no different to those under normal operational changes in load. WPI's maximum planned load change in any 5-minute period will never exceed 25MW.

57. During periods of rolling outages, WPI will pre-consult with the System Operator on the time of day when load is planned to be reduced and the duration of the reduction period. Each load reduction will be sustained for a minimum of four hours, but more likely for much longer continuous periods as required to achieve the required level of savings.

58. WPI will use best endeavours to minimise the impact of load changes on frequency and voltage stability and, if requested by the System Operator, will minimise the disconnection and restoration of load during times when demand is typically ramping up or down in the region affected by the supply shortage (for example, either side of morning and evening peaks).

Coordination with the System Operator

59. Communications from the System Operator for coordination of WPI's operations will be made in the first instance to:

    Contact: WPI Control Room
    Phone: 06 385 8545 EXT 854

60. The WPI Control Room will confirm, by telephone to the System Operator, all emails received by WPI from the System Operator requesting load reductions under a direction. Load reductions will only be made once telephone confirmation has been made.

Monitoring and reporting

61. Monitoring and reporting for operational purposes will be to the System Operator. WPI will keep the System Operator aware of the intended measures to be taken under the Savings Plan and will report weekly (or as directed by the System Operator) on the measures taken and savings achieved against targets.

62. For major refiner loads, WPI's internally captured data will be used to produce daily or weekly reports of savings achieved.

63. For unmetered loads, savings will be calculated by comparison with an average energy consumption profile and the observed actual loading reductions for during a supply shortage event.

64. Monitoring and reporting is the responsibility of Stuart Gibson

65. If required, reporting to the Electricity Authority will be undertaken as requested.