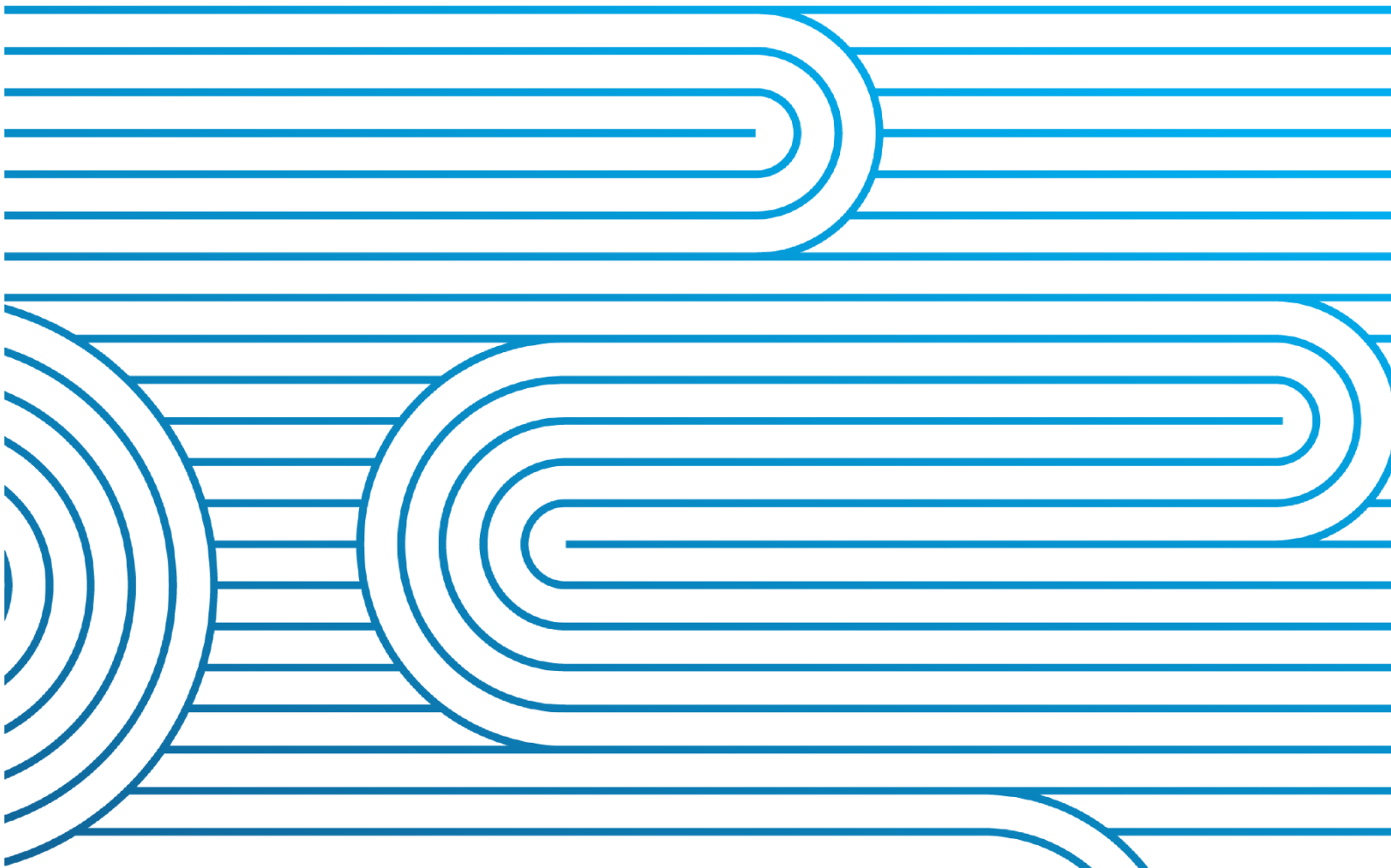


# Monthly System Operator and system performance report

for the Electricity Authority

May 2023



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## Report Purpose

This report is Transpower's review of its performance as system operator for May 2023, in accordance with clause 3.14 of the Electricity Industry Participation Code 2010 (the Code).

### Changes to the monthly report content

From April 2023 the monthly report will focus on the activity and performance of the system operator, as agreed with the Authority. System performance data which was previously included in this report will be presented through other channels where relevant, such as the system operator industry forum.

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## 1 Key points this month

- We are working with the industry as part of our winter 2023 preparation, to ensure we can provide a co-ordinated end-to-end response to potential low capacity situations.
  - We carried out a two-part industry exercise. Day one was led by the system operator with electricity distribution business (EDBs). Day two was led by the Authority and focussed on the communications from EDBs to retailers and end consumers which we supported with communications input and scenario examples. We received “overwhelmingly positive” feedback following the exercises and contributors said appreciated being part of the solution.
  - We extended our regular fortnightly system operator industry forum to take all industry participants through our approach to winter, including how we will communicate any potential risk to consumers’ electricity supply.
- We assessed five controls as part of our latest round of risk control self-assessment; two were assessed as partially effective and three as fully effective. We have already agreed to implement improvement activities to lift effectiveness of the two partially effective controls which relate to people succession and creating new procedures.
- The three remaining business assurance audits are on track to be completed by 30 June. We met with the Authority on 14 June to discuss what business processes will be on the audit plan for the next financial year.
- We submitted one system operator self-breach in May relating to an issue caused by functionality in the system operator’s voltage stability assessment tool which meant that a voltage stability constraint in the Southland region was set at a lower value than the system operator’s normal operating assumptions for the region. The system remained secure with this lower value adopted and the system operator has corrected the defect via a tool version upgrade.
- We have completed an assessment of AUFLS transition to a 4-block scheme based on the transition plans submitted by North Island connected asset owners. The analysis shows that provided the transition plans are followed, the system will remain secure for an AUFLS event.
- We have taken into consideration comments on the draft Performance Metrics and Incentives Agreement from the Authority’s System Operator Committee (SOC) and continue to work with the Authority staff to develop the scoring scales and weightings used to calculate the incentive payment. This is on track to enable the refreshed metrics and incentive mechanism for FY23-24 to go live on 1 July.
- We are organising follow-up sessions with EDBs on our market insight “distributed flexibility for whole system operation” which was published in December. Feedback has been generally supportive of the positions taken in our paper. We are currently working on a response to the submissions.
- The Operational Excellence Programme has finished detailed planning of individual initiatives. Delivery activities are now gaining momentum and the next period will focus on establishing tracking of benefits and outcomes, plus confirming roles and responsibilities through a significant period of change for the programme’s senior stakeholders.
- We presented the draft System Operator Strategic Plan for 2023-28 to the Authority SOC on 17 April. We have taken onboard their comments and the final report will be delivered on 30 June.

- As we approach the winter period, we are watching NZGB closely. There are some potential shortfalls in early June for the N-1-G scenario, but these currently only fall within the week-ahead schedules.
- Work is underway reviewing how we manage short term secondary tripping risk associated with generators while they are commissioning given the increase of commissioning activity on the power system. The aim of the work is to ensure that we can manage the risk of multiple generator units commissioning on the system at any given time to an acceptable level without excessive market cost associated with procurement of reserves.

## 2 Customers and other relationships

### Winter 2023 preparation: Two-part industry exercise

Day one of the industry exercise was held on Wednesday 24 May 2023. The exercise was attended by control room representatives from almost every Electricity Distribution Business (EDB) around the country to test industry-wide processes for managing potential electricity supply shortfalls this winter. The exercise focused on educating and working with EDBs to ensure we have alignment around the updated information being delivered by the Authority's winter '23 initiatives work programme. The exercise also ran through the procedures that provide us with visibility of, and access to controllable load when required.

Participants were engaged throughout the day, and we have received really positive feedback on the value of the exercise ahead of winter.

Day two of the exercise on Wednesday 31 May 2023 was led by the Authority and focussed on the communications from EDBs to retailers and end consumers. We supported the Authority with communications input and scenario examples.

Consumers gave "overwhelmingly positive" feedback following the event and appreciated being part of the solution.

### Winter 2023 preparation: Extended SO Industry forum

This extended forum, entitled "Navigating the winter capacity challenge", was held on 30 May. The purpose of the forum was to take all industry participants through our approach to winter, including how we will communicate any potential risk to consumers' electricity supply. The forum was attended by 225 individuals, with our regular operational attendees joined by chief executives, senior managers, communications and customer staff and other people involved in managing and communicating major power system events.

## 3 Risk & Assurance

### Risk Management Framework

Control self-assessment: We completed our latest round of risk control self-assessment (CSA). In this round we assessed five controls; the same five controls were assessed in May 2022 and ensures an annual review of the same controls. When compared to last year, the monitor and evaluate control decreased by 5% and the stakeholder management control increased by 3% which both remain in the partial

effective range. The connected asset monitoring control moved into fully effective and the people management and change management controls stayed in fully effective with slight increases to their scores. We have already agreed to implement improvement activities to lift effectiveness of the two partially effective controls which relate to people succession and creating new procedures.

**Business assurance audits**

The three remaining audits are in various stages of delivery, all will be completed by the end of June 2023 as per the SOSPA contract:

- Voltage Stability Assessment Tool (VSAT) change management audit fieldwork has been completed and a draft report submitted for management comment.
- Ancillary Service contract management audit fieldwork has been completed and a draft report submitted for management comment.
- Audit on Simultaneous Feasibility Test (SFT) constraints audit fieldwork has been completed and a draft report submitted for management comment.

We have started discussions with the Authority on what business processes to audit next financial year under the SOSPA. A meeting was held on June 14 as the first stage to agreeing the audit plan.

## 4 Compliance

Self-breach. We submitted one system operator self-breach in May. An issue caused by functionality in the system operator’s voltage stability assessment tool (VSAT) meant a voltage stability constraint in the Southland region was set at a lower value than the system operator’s normal operating assumptions for the region. The constraint bound in 102 trading periods between 7 February 2022 and 13 April 2022. The market impact is difficult to accurately quantify, as although the constraint was inconsistent with the system operator’s normal operating assumption for the region, any impact on final pricing was largely attributable to Tiwai, which has electricity contracts outside the spot market. The system remained secure with this lower value adopted.

The system operator has corrected the defect via a tool version upgrade.

## 5 Impartiality of Transpower roles

We have three open items in the Conflict of Interest Register (below). These are being actively managed in accordance with our Conflict of Interest procedure.

System Operator Open Conflict of Interest Issues		
ID	Title	Managed by
29	<b>Preparing the Net Benefit test – system operator involvement:</b> The system operator is reviewing how it can provide information for use by the grid owner undertaking a Net Benefit Test.	Operations Planning Manager
40	<b>General System Operator/Grid Owner dual roles:</b> This is a general item that will remain permanently open to cover all employees with a dual system operator/grid owner role. The item documents the actions necessary to ensure impartiality in these circumstances; these items will be monitored to ensure their continue effectiveness.	SO Compliance & Impartiality Manager

System Operator Open Conflict of Interest Issues		
ID	Title	Managed by
41	<b>General relationship situation:</b> This is a general item that will remain permanently open to cover all potential conflicts of interest arising under a relationship situation. This item documents the actions necessary to prevent an actual conflict arising and will be monitored by the SO Compliance & Impartiality Manager to ensure their continued effectiveness.	SO Compliance & Impartiality Manager

## 6 Project updates and other initiatives

### 6.1 Market design and service enhancement project updates

Progress against high value, in-flight market design, service enhancement and service maintenance projects are included below along with details of any variances from the current capex plan.

#### Real Time Pricing (RTP)

The project went live successfully on 27 Apr 2023. The project is now in closedown mode.

#### Future Security and Resilience (FSR) Programme

Consultation feedback on the issues paper relating to common quality (Part 8 of the Code) closed on 30 May. We are continuing to work on scoping and planning the activities required to explore options to address the issues raised in the paper and deliver the required Code changes.

#### Extended Reserves – AUFLS Project

We have completed an assessment of AUFLS transition to a 4-block scheme based on the transition plans submitted by North Island connected asset owners. The analysis shows that provided the transition plans are followed, the system will remain secure. The technical study report has been documented, and the team will complete the AUFLS Transition Plan over the next period, which will be presented to the North Island Connected Asset Owners mid-July.

### 6.2 Other projects and initiatives

#### KPI Refresh Programme

We have taken into consideration comments on the draft Performance Metrics and Incentives Agreement from the Authority’s System Operator Committee (SOC) in April. We continue to work with the Authority staff to develop the scoring scales and weightings used to calculate the incentive payment. This is on track to enable the refreshed metrics and incentive mechanism for FY23-24 to go live on 1 July.

#### Operational Excellence

The Operational Excellence Programme has finished detailed planning of individual initiatives. Delivery activities are now gaining momentum and the programme is entering a steady, managed state. The governance and assurance methodology has

been devised. The next period will focus on establishing tracking of benefits and outcomes, while transitioning responsibilities through a period of change for some of the programme's senior stakeholders.

### 6.3 SOSPA deliverables

#### **Draft System Operator Strategic Plan**

We presented the draft System Operator Strategic Plan for 2023-28 to the Authority SOC on 17 April and have been working to include feedback into the final document where appropriate. The plan is on track to be published by 30 June.

## 7 Technical advisory hours and services

Technical advisory hours and a summary of all technical advisory services (TAS) to which those hours related (SOSPA 12.3 (d) refers) will be provided in the next quarterly report.

## 8 Outage planning and coordination

#### **Outage planning – near real time**

We continued to see very high outage volumes during April and May, although numbers are forecast to drop as we move into winter. We are seeing low levels of generation outages in the coldest months – July and August.

We continue to coordinate with the grid owner on changes to outages as a result of Cyclone Gabrielle and have assessed risks to system security with low levels of grid transmission in the Hawkes Bay region. We have completed our assessment of the grid owner's 2023-24 annual outage plan which they published in advance of the 19 May regulatory requirement.

#### **New Zealand Generation Balance (NZGB) analysis**

As we approach the winter period, we are watching NZGB closely. There are some potential shortfalls in early June for the N-1-G scenario (for the loss of the largest risk-setter and if one large generator or HVDC pole were unavailable). At the time of writing these shortfalls occur within the week-ahead schedules, which we will monitor. There are generally low levels of generator outages through the winter, but we are seeing some lower, although positive, margins in September.

## 9 Power systems investigations and reporting

#### **Significant incident investigations**

No new significant events were identified during the reporting period. One 'major' significant incident continues to be investigated:

- Event 4355 – The event during Cyclone Gabrielle impacting multiple sites and communications in Hawkes Bay and resulting in loss of supply to customers and consumers. The grid emergency was declared at 08:17 on 14 February and remained in place until 10 March 2023. The final report is due in early July.



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We are still awaiting feedback from the Authority on our proposal to change the significant incident criteria to ensure we are reporting on the right level of incidents considering associated consequences.

**Generator Commissioning**

Work is underway reviewing how we manage short term secondary tripping risk associated with generators while they are commissioning given the increase of commissioning activity on the power system. The aim of the work is to ensure that we can manage the risk of multiple generator units commissioning on the system at any given time to an acceptable level without excessive market cost associated with procurement of reserves.

**Automatic under-frequency load shedding (AUFLS) compliance**

We are meeting with the Authority in early June to discuss the outcome of the system operator's assessment of the 2021 AUFLS data. The Authority has also indicated they will request the same analysis for the 2022 AUFLS data. This is data provided by connected asset owners in the North Island, and the grid owner in the South Island.

## 10 Performance metrics and monitoring

System operator performance against the performance metrics for the financial year as required by SOSPA 12.3 (a) will be provided in the final quarterly report.

## 11 Cost-of-services reporting

The cost of services reporting for 2021/22 was delivered to the Authority in early May.

## 12 Actions taken

A full list of actions taken regarding the system operator business plan, statutory objective work plan, participant survey responses and any remedial plan, as required by SOSPA 12.3 (b) will be provided in the next quarterly report.

## Appendix A: Discretion

In recent months, discretion has been reclassified to include the process to manage generators on minimum MW values. As a result, the list of discretions in this report is much larger than recorded in previous months.

### 59 instances

Event Date and Time	Description
8/5/2023 16:46	KAW0112 ONU0 Discretion Clause 13.70, Part 13 ENR Max : 41 Start: 08-May-2023 16:46 End: 08-May-2023 17:00 Notes: Test. Last Dispatched: Mw: 41 ResF: NULL ResS: NULL Notes: Requested by MS to set up a discretion for ONU to prove that the MS was working correctly after their unplanned update, Discretion not dispatched
9/5/2023 12:06	KAW0112 ONU0 Discretion Clause 13.70, Part 13 ENR Max : 0 Start: 09-May-2023 12:06 End: 09-May-2023 12:30 Last Dispatched: Mw: 31 ResF: NULL ResS: NULL Notes: Requested by MS to set up a discretion for ONU to prove that the MS was working correctly after their unplanned update, Discretion not dispatched
9/5/2023 17:35	WHI2201 WHI0 Discretion Clause 13.70, Part 13 ENR Min : 50 Start: 09-May-2023 17:35 End: 09-May-2023 18:00 Notes: Required for security due to low residual Last Dispatched: Mw: 0 ResF: 0 ResS: 0
9/5/2023 17:47	WHI2201 WHI0 Discretion Clause 13.70, Part 13 ENR Min : 75 Start: 09-May-2023 17:47 End: 09-May-2023 18:00 Notes: Required for security due to low residual Last Dispatched: Mw: 30.9 ResF: 19.1 ResS: 37.08
9/5/2023 17:49	MKE1101 MKE1 Discretion Clause 13.70, Part 13 ENR Min : 35 Start: 09-May-2023 17:49 End: 09-May-2023 18:00 Notes: Required for security due to low residual Last Dispatched: Mw: 33.33 ResF: NULL ResS: NULL
9/5/2023 17:52	WHI2201 WHI0 Discretion Clause 13.70, Part 13 EN Min : 75 Start: 09-May-2023 17:52 End: 09-May-2023 18:30 Notes: Required for security due to low residual Last Dispatched: Mw: 34.09
9/5/2023 17:58	WHI2201 WHI0 Discretion Clause 13.70, Part 13 EN Min : 75 Start: 09-May-2023 17:58 End: 09-May-2023 18:30. Required for security due to low residual. Notes: null Last Dispatched: Mw: 63.4
9/5/2023 17:58	WHI2201 WHI0 Discretion Clause 13.70, Part 13 FIR Max : 0 Start: 09-May-2023 17:58 End: 09-May-2023 18:30. Required for security due to low residual. Notes: null Last Dispatched: ResF: .65 ResS: 36.47
9/5/2023 17:58	WHI2201 WHI0 Discretion Clause 13.70, Part 13 SIR Max : 0 Start: 09-May-2023 17:58 End: 09-May-2023 18:30. Required for security due to low residual. Notes: shortfall Last Dispatched: ResF: .65 ResS: 36.47
10/5/2023 10:31	TKU2201 TKU0 Discretion Clause 13.70, Part 13 ENR Max : 200 Start: 10-May-2023 10:31 End: 10-May-2023 11:00 Notes: . Last Dispatched: Mw: 240 ResF: 0 ResS: 0. Multiple security violations after the tripping of RPO_WRK_1.

Event Date and Time	Description
11/5/2023 17:52	WHI2201 WHI0 Discretion Clause 13.70, Part 13 ENR Min : 10 Start: 11-May-2023 17:52 End: 11-May-2023 18:30 Notes: Required for security due to low residual. Last Dispatched: Mw: 31.06 ResF: 0 ResS: 37.27
11/5/2023 18:25	WHI2201 WHI0 Discretion Clause 13.70, Part 13 EN Min : 10 Start: 11-May-2023 18:25 End: 11-May-2023 19:30 Notes: Required for security due to low residual. Last Dispatched: Mw: 12
11/5/2023 18:25	WHI2201 WHI0 Discretion Clause 13.70, Part 13 FIR : Start: 11-May-2023 18:25 End: 11-May-2023 19:30. Required for security due to low residual. Notes: null Last Dispatched: ResF: 0 ResS: 3.72
11/5/2023 18:25	WHI2201 WHI0 Discretion Clause 13.70, Part 13 SIR : Start: 11-May-2023 18:25 End: 11-May-2023 19:30 Notes: Required for security due to low residual. Last Dispatched: ResF: 0 ResS: 3.72
12/5/2023 7:33	WHI2201 WHI0 Discretion Clause 13.70, Part 13 EN Min : 10 Start: 12-May-2023 07:33 End: 12-May-2023 08:30 Notes: Low national residual and other slow ramping plant. Last Dispatched: Mw: 3.19
14/5/2023 10:45	HLY5 scheduled below their minimum operating run of 182MW from 11:00 to 16:30 today. Discussed with Genesis trader who advised they would claim Rule 13.82(a) citing minimum run of 182MW for plant safety if dispatched below this. Studies show keeping HLY5 on at its minimum run is the least cost solution and they are required for evening peak load. NI Optional Island Manual CE risk set to 181MW from 11:00 to 16:30.
15/5/2023 15:49	SFD2201 SFD22 Discretion Clause 13.70, Part 13 EN Min : 5 Start: 15-May-2023 15:49 End: 15-May-2023 18:35 Notes: For evening peak, possible low residual and needed for reserves also Last Dispatched: Mw: .78
15/5/2023 17:21	WHI2201 WHI0 Discretion Clause 13.70, Part 13 EN Min : 10 Start: 15-May-2023 17:21 End: 15-May-2023 18:30 Notes: To bring on early as load rising fast and WHI takes approx. 10 mins to start Last Dispatched: Mw: 0
15/5/2023 17:49	MHO0331 MHO0 Discretion Clause 13.70, Part 13 ENR Max : 0 Start: 15-May-2023 17:49 End: 15-May-2023 18:30 Notes: Tripped from 26MW Last Dispatched: Mw: 26 ResF: 0 ResS: 0
16/5/2023 7:21	WHI2201 WHI0 Discretion Clause 13.70, Part 13 EN Max : 18 Start: 16-May-2023 07:21 End: 16-May-2023 07:24 Notes: Incorrect Discretion entered by EC- Discretioned on for AMPK. Last Dispatched: Mw: 25
16/5/2023 7:24	WHI2201 WHI0 Discretion Clause 13.70, Part 13 EN Min : 18 Start: 16-May-2023 07:24 End: 16-May-2023 07:28 Notes: Discretioned on for AMPK. Last Dispatched: Mw: 25
16/5/2023 7:28	SI Frequency keeper WTR excluded for TP16 and 17 to free up 70MW that was constrained down for MW CNTRLMAX. No Frequency keeper selected for South Island for the affected TP's.
16/5/2023 8:18	WHI2201 WHI0 Discretion Clause 13.70, Part 13 EN Min : 10 Start: 16-May-2023 08:18 End: 16-May-2023 08:30 Notes: Easing off Discretion on WHI for end of AMPK. Last Dispatched: Mw: 18
16/5/2023 18:05	ARI1101 ARI0 Discretion Clause 13.70, Part 13 EN Max : 68 Start: 16-May-2023 18:05 End: 16-May-2023 18:30 Notes: For switching to open CB48 at ARI Last Dispatched: Mw: 81

Event Date and Time	Description
19/5/2023 23:21	Trader claimed Rule 13.82(A) for TP 5 and 6 based on NRSS. Due to plant and personnel safety they would not comply if dispatched to less than 147MW. Manual Optional AC risk of 146MW applied for trading periods 05-16 reflecting the periods in the NRSL NAP dispatched below 147.
20/5/2023 18:50	Trader claimed Rule 13.82(A) for NAP TP 44 to TP 17 in NRSS & NRSL. Due to plant and personnel safety they would not comply if dispatched to less than 146MW. Manual Optional AC risk applied for trading periods 44-17 reflecting the periods NAP dispatched below their minimum run
20/5/2023 20:16	NAP2201 NAP0 Discretion Clause 13.70, Part 13 ENR Min : 145 Start: 20-May-2023 20:16 End: 20-May-2023 20:30 Notes: 13.82a claimed at 18:40 NAP dropped below minimum earlier than scheduled, Last Dispatched: Mw: 145 ResF: NULL ResS: NULL
21/5/2023 21:09	Trader claimed Rule 13.82(A) for NAP TP 46 to TP 13 in NRSS & NRSL. Due to plant and personnel safety they would not comply if dispatched to less than 146MW. Manual Optional AC risk applied for trading periods 46-13 reflecting the periods NAP dispatched below their minimum run
22/5/2023 13:35	OKI scheduled below their minimum operating run of 35MW. CC trader claimed Rule 13.82(a). OKI currently part of binding NI risk group including NTM & NAP as well. NI Optional Island Manual CE risk set to 261MW (mins NAP+NTM+OKI) current trading period only. Keeping OKI+NTM+NAP on is the least cost solution.
22/5/2023 17:42	WHI2201 WHI0 Discretion Clause 13.70, Part 13 ENR Min : 30 Start: 22-May-2023 17:42 End: 22-May-2023 18:30 Notes: Possible Energy SF due to ramping plant for PM PK Last Dispatched: Mw: 25 ResF: 0 ResS: 29.75
22/5/2023 22:55	OKI and NTM dispatched below their minimum operating run of 37MW and 86MW respectively in 22:55 RTD. CCC and MRG trader claimed Rule 13.82(a) for OKI and NTM+NAP. All 3 stations part of binding AC risk for ongoing OKI_WRK_1 outage. NI Optional Island Manual CE risk set to 268MW from 22nd May 23:00 to 23rd May 06:00. Keeping OKI+NTM+NAP online is the least cost solution. These generators are required for overnight voltage support. NAP required for over frequency arming as well.
23/5/2023 16:03	OKI scheduled below their minimum operating run of 35MW. CC trader claimed Rule 13.82(a). OKI currently part of binding NI risk group including NTM & NAP as well. NI Optional Island Manual CE risk set to 261MW (mins NAP+NTM+OKI) current & next trading period only. Keeping OKI+NTM+NAP on is the least cost solution.
23/5/2023 21:20	OKI, NTM and NAP scheduled below their minimum operating run of 37MW, 85MW and 145MW respectively in NRSS from 22:00 onwards. CCC and MRG trader claimed Rule 13.82(a) for OKI, NTM and NAP. All 3 stations part of binding AC risk for ongoing OKI_WRK_1 outage. NI Optional Island Manual CE risk set to 266MW from 23rd May 22:00 to 24th May 06:30. Keeping OKI+NTM+NAP online is the least cost solution. These generators are required for overnight voltage support. NAP required for over frequency arming as well.

Event Date and Time	Description
24/5/2023 9:53	OKI scheduled below their minimum operating run of 35MW. CC trader claimed Rule 13.82(a). OKI currently part of binding NI risk group including NTM & NAP as well. NI Optional Island Manual CE risk set to 267MW (min NAP+NTM+OKI) current & next trading period only. Keeping OKI+NTM+NAP on is the least cost solution.
24/5/2023 21:49	OKI scheduled below their minimum operating run of 36MW 00:30-05:00. Confirmed CC trade would r claim Rule 13.82(a). OKI currently part of binding NI risk group including NTM & NAP as well. NI Optional Island Manual CE risk set to 267MW (mins NAP+NTM+OKI)00:00 - 05:30). Required generation for AMPK.
25/5/2023 21:53	OKI2201 OKI0 Discretion Clause 13.70, Part 13 EN Min : 35 Start: 25-May-2023 21:53 End: 25-May-2023 22:00 Notes: Claimed 13.82A plant safely to 35MW min. Last Dispatched: Mw: 26.33
25/5/2023 21:55	OKI scheduled below their minimum operating run of 36MW 21:30 - 05:00. Confirmed CC trade would claim Rule 13.82(a). OKI currently part of binding NI risk group including NTM & NAP as well. NI Optional Island Manual CE risk set to 269MW (mins NAP+NTM+OKI) 00:00 - 05:30). Required generation for AMPK.
26/5/2023 11:37	OKI scheduled below their minimum operating run of 36MW 11:30 - 16:30. Confirmed CC trade would claim Rule 13.82(a). OKI currently part of binding NI risk group including NTM & NAP as well. NI Optional Island Manual CE risk set to 269MW (mins NAP+NTM+OKI) 00:00 - 05:30). Ops case run and better market outcome price wise for generation to remain on.
27/5/2023 0:25	NAP scheduled below min running of 147MW from 06:30 - 07:30. MRG trader confirmed they would claim a 13.82a if dispatched below their min running. An OPS case was run to prove keeping NAP on was the least cost solution to the market. It had an average impact of \$5/MW on the marginal price. NAP also required for overnight voltage support Min reserves modelled from 06:30 to 07:30 of 146 for NAP min running of 147MW.
27/5/2023 6:24	MRG claimed a 13.82a for a min run of 147MW at NAP after seeing it scheduled below that in the forward looking schedules from 00:30 - 06:30. An OPS case was run to prove keeping NAP on was the least cost solution to the market. It had an average impact of \$5/MW on the marginal price. NAP also required for overnight voltage support Min reserves modelled from 00:30 to 06:30 of 146 for NAP min running of 146MW.
27/5/2023 23:23	MRG claimed a 13.82a for a min run of 147MW at NAP after seeing it scheduled below that in the forward looking schedules from 02:00 - 02:30 An OPS case was run to prove keeping NAP on was the least cost solution to the market. It had an average impact of \$5/MW on the marginal price. NAP also required for overnight voltage support Optional NI CE risk of 146MW applied from 02:00 to 02:30 of 146MW. Schedule changes required modelling from 00:00 to 0600.
27/5/2023 23:37	HLY2201 HLY5 Discretion Clause 13.70, Part 13 ENR Min : 182 Start: 27-May-2023 23:37 End: 28-May-2023 00:00 Notes: Genesis trader claimed Rule 13.82(A) to be dispatched to182MW to allow unit to stabilise and cool down after frequency keeping duties ended at 23:30 before shutdown at 00:00. Last Dispatched: Mw: 150.78 ResF: 0 ResS: 0

Event Date and Time	Description
28/5/2023 19:34	NAP scheduled below min running of 147MW from 23:00 - 06:30 in 18:00 NRSL. MRG trader confirmed they would claim a 13.82a if dispatched below their min running. An OPS case was run to prove keeping NAP on was the least cost solution to the market. It had an average impact of \$2/MW on the marginal price. NAP also required for overnight voltage support Min reserves modelled from 23:00 to 06:30 of 146 for NAP min running of 147MW.
28/5/2023 23:35	HLY2201 HLY5 Discretion Clause 13.70, Part 13 EN Min : 182 Start: 28-May-2023 23:35 End: 29-May-2023 00:00 Notes: Claimed rule 13.8.2.2.A due to resource consents, discussed with security and are required to stay on for security purposes Last Dispatched: Mw: 160.59
29/5/2023 2:51	HLY2201 HLY6 Discretion Clause 13.70, Part 13 ENR Min : 40 Start: 29-May-2023 02:51 End: 29-May-2023 04:30 Notes: Under security instruction Last Dispatched: Mw: 0 ResF: NULL ResS: NULL
29/5/2023 19:52	NAP scheduled below min running of 147MW from 23:00 - 06:30 in 18:00 NRSL. MRG trader confirmed they would claim a 13.82a if dispatched below their min running. An OPS case was run to prove keeping NAP on was the least cost solution to the market. It had an average impact of \$2/MW on the marginal price. NAP also required for overnight voltage support Min reserves modelled from 23:00 to 06:30 of 146 for NAP min running of 147MW.
29/5/2023 23:40	HLY2201 HLY5 Discretion Clause 13.70, Part 13 ENR Max : 0 Start: 29-May-2023 23:40 End: 30-May-2023 00:00 Notes: Trader claimed 13.82/2a due to plant safety, HLY5 min run is 182MW. Advised as they are due to come off next TP, we will send 0MW dispatch. Last Dispatched: Mw: 146 ResF: 0 ResS: 0
30/5/2023 2:29	HLY2201 HLY6 Discretion Clause 13.70, Part 13 ENR Max : 30 Start: 30-May-2023 02:29 End: 30-May-2023 03:30 Notes: Discretioned on for voltage support. Trader advised min possibly 30MW but will check and come back to us. 30MW min entered initially. Last Dispatched: Mw: 0 ResF: NULL ResS: NULL
30/5/2023 2:30	HLY2201 HLY6 Discretion Clause 13.70, Part 13 EN Min : 3 Start: 30-May-2023 02:30 End: 30-May-2023 04:00 Notes: Discretioned on for voltage support. Trader advised min possibly 30MW but will check and come back to us. 30MW min entered initially. Last Dispatched: Mw: 0
30/5/2023 2:31	HLY2201 HLY6 Discretion Clause 13.70, Part 13 EN Min : 30 Start: 30-May-2023 02:31 End: 30-May-2023 04:00 Notes: Discretioned on for voltage support. Trader advised min possibly 30MW but will check and come back to us. 30MW min entered initially. Last Dispatched: Mw: 0
30/5/2023 6:33	NAP2201 NAP0 Discretion Clause 13.70, Part 13 EN Min : 146 Start: 30-May-2023 06:33 End: 30-May-2023 07:30 Notes: Required on for OFA requirements and winter energy requirements. 2c MW price 9c reserve price. Last Dispatched: Mw: 136.39

Event Date and Time	Description
30/5/2023 19:17	NAP scheduled below min running of 146MW from 23:30 - 06:00 in 18:00 NRSL. MRG trader confirmed they would claim Rule 13.82 (a) if dispatched below their minimum range. Keeping NAP on is the least cost solution. NAP also required for overnight voltage support and over frequency arming. 145 MW manual NI CE risk scheduled from 30/05 23:30 to 01/06 06:00
30/5/2023 19:24	HLY5 scheduled below min running of 182MW in TP (48) before being scheduled off in 18:00 NRSL. GEN trader confirmed they would claim Rule 13.82 (a) if dispatched below their minimum range. Dispatching HLY5 off is the least cost solution to the market based on OPS case interval cost comparison. EC to Discretion HLY5 to 0MW when dispatched below min.
30/5/2023 23:44	HLY2201 HLY5 Discretion Clause 13.70, Part 13 ENR Max : 102 Start: 30-May-2023 23:44 End: 31-May-2023 23:50 Notes: Dispatched below min generation of 182 MW. Claimed 13.82 2(a). Discretioned off on SC advice, within their ramp rate to allow other generation to respond. Last Dispatched: Mw: 182 ResF: 0 ResS: 0
30/5/2023 23:50	HLY2201 HLY5 Discretion Clause 13.70, Part 13 ENR Max : 80 Start: 30-May-2023 23:53 End: 31-May-2023 23:54 Notes: Dispatched below min generation of 182 MW. Claimed 13.82 2(a). Discretioned off on SC advice, within their ramp rate to allow other generation to respond. Last Dispatched: Mw: 102 ResF: 0 ResS: 0
30/5/2023 23:53	HLY2201 HLY5 Discretion Clause 13.70, Part 13 ENR Max : 0 Start: 30-May-2023 23:53 End: 31-May-2023 00:00 Notes: Dispatched below min generation of 182 MW. Claimed 13.82 2(a). Discretioned off on SC advice, within their ramp rate to allow other generation to respond. Last Dispatched: Mw: 80 ResF: 0 ResS: 0
31/5/2023 19:58	NAP dispatched below min running of 146 MW MRG trader claimed a 13.82a . Optional Manual Risk set to 145MW. Schedules show NAP being dispatched below minimum most of the night. Ops case ran and marginal price affected by approx. \$4