

DWGM EVENT – INTERVENTION – 22-23 FEBRUARY 2018

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Contents

1	Introduction	4
2	Background	4
3	Appropriateness of actions taken by AEMO	5
3.1	Scheduling outcome	5
3.1.1	Lost opportunity to withdraw gas at Iona CPP	5
3.1.2	Out-of-merit-order injections	6
4	Costs of intervention	6
4.1	Total Ancillary Payments and Uplift Payments	6
5	Adequacy of Part 19 of the NGR	7
5.1	Maintenance approval	7
5.2	Uplift allocation	7
5.2.1	Allocation of uplift to the Declared Transmission System Service Provider	7
5.2.2	Adequacy of Ancillary Payment Procedures	7
5.3	Market Notices	8
5.4	Intervention Report Timing	8
6	Conclusion	8
	Appendix A – Chronology	10

IMPORTANT NOTICE

Purpose

AEMO has prepared this report pursuant to rule 351 of the National Gas Rules, using information available as at 9 March 2018, unless otherwise specified.

Disclaimer

AEMO has made every effort to ensure the quality of the information in this report but cannot guarantee its accuracy or completeness. Any views expressed in this report are those of AEMO unless otherwise stated, and may be based on information given to AEMO by other persons.

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1 Introduction

AEMO issued a notice of a threat to system security in the Victorian Declared Wholesale Gas Market (DWGM) for gas day 23 February 2018 due to an unplanned outage of all three large Centaur compressors at the Brooklyn Compressor Station (BCS) on 22 February 2018.

Rule 351(1)(b) of the National Gas Rules (NGR) requires that AEMO investigate and prepare a report following an event which is or may be a threat to system security. Rule 351 also requires that AEMO assess and advise on:

- the adequacy of the provisions of the NGR relevant to the event or events;
- the appropriateness of actions taken by AEMO in relation to the event or events; and
- the costs incurred by AEMO and registered participants as a consequence of responding to the event or events.

This report is published in accordance with rule 351(2) of the NGR. All times used in this report are AEST (Market Time), and a chronology of events is included in Appendix A – Chronology.

2 Background

APA Group, the owner of the Victorian Declared Transmission System (DTS), undertook a full outage of the BCS on 22 February 2018 between the hours 06.00 to 10.00 as a planned maintenance activity. This outage was associated with the South West Pipeline (SWP) Capacity Expansion Project, which will enable increased western flows through the SWP.

The BCS is primarily used to compress gas to:

- support gas withdrawals from the SWP into the Iona underground gas storage (Iona UGS) facility at Port Campbell;
- assist in balancing system line-pack in the SWP;
- support system demand on the Brooklyn to Lara Pipeline (BLP), SWP and the Western Transmission System (WTS) when there are no injections into the SWP at Port Campbell;
- support gas-fired power generation (GPG) at the Laverton North Power Station which is supplied from the Brooklyn-Corio Pipeline (BCP); and
- support system demand on the Brooklyn-Ballan Pipeline including supply to Ballarat on high demand days
- maintain pressure above operating limits in the BCP to supply Geelong during the shoulder seasons and mild winter days when Iona UGS is withdrawing gas from the SWP.

At 09.00 hrs on 22 February 2018, APA advised AEMO that the testing of compressors was delayed until 12.00 hrs. During this testing, one of the Brooklyn compressors (unit 12) tripped on high enclosure temperature. Investigation showed that this was due to a crack in the exhaust bellows. APA then found cracks in the exhaust bellows of the other two BCS Centaur compressors (units 10 and 11), and advised AEMO that these three compressors would not be available until further notice.

This meant that only the two small Saturn compressors (units 8 and 9) were available at BCS. These compressors do not operate at sufficient pressure to support system demand on the BLP, SWP and WTS when there are no injections into the SWP at Port Campbell. As sufficient supply from Port Campbell was unlikely to be scheduled without future action by AEMO due to Iona UGS withdrawals, AEMO determined it was necessary to inform participants.

At 16.00 hrs, AEMO held an industry conference to inform participants that:

- From 18.00 hrs (i.e. for the remainder of the gas day) on 22 February 2018 and for the entire gas day 23 February 2018, no Iona close proximity point (CPP) withdrawals would be scheduled. Any injections at Iona CPP would not be constrained;
- The restriction on the SWP withdrawals at all Iona CPP points would be an operating schedule (OS) only constraint;
- If there were insufficient injections at the Iona CPP to maintain SWP pressures, AEMO would issue a notice of a threat to system security and schedule out-of-merit-order injections;
- System Wide Notices (SWN) would be issued to update participants on the situation as it progressed.

At 17.10 hrs, AEMO issued a market notice to notify participants that compression into SWP would be unavailable due to an unplanned outage and that it was seeking a market response to the threat to system security for gas day 23 February 2018. The notice advised that AEMO would schedule net injections at Iona CPP when required to ensure there are sufficient injections for meeting demand on the BLP, SWP and WTS.

APA returned BCS unit 12 to service at 15.00 hrs on 23 February 2018, and AEMO issued a SWN indicating the threat to system security had ended. BCS unit 11 returned to service at 10:25 hrs on 24 February 2018.

3 Appropriateness of actions taken by AEMO

AEMO's objectives during this event were to:

- Operate in accordance with the NGR and the Wholesale Market Procedures;
- Limit the risk of involuntary curtailment to customers including the Laverton North Power Station;
- Alleviate the threat to system security and return the DTS to normal operating conditions.

3.1 Scheduling outcome

The impact on scheduling outcomes is separated into two sections below:

- lost opportunity to withdraw gas at Iona CPP into the Iona UGS facility; and
- scheduling of out-of-merit-order injections i.e. offers above the market price.

3.1.1 Lost opportunity to withdraw gas at Iona CPP

To schedule the required net injections at Iona CPP during the unplanned outage, AEMO de-scheduled the controllable withdrawals for the scheduling horizons between 14.00 hrs on 22 February 2018 and 14.00 hrs on 23 February 2018.

This de-scheduling of withdrawals occurred despite some market response during the BCS outage. It is likely that the de-scheduled withdrawal quantity would have been higher in the absence of this market response.

The following table lists the de-scheduled withdrawal quantities (in GJ) at the Iona CPP in the operating schedules as a result of the BCS unplanned outage.

Gas Day	Scheduling Horizon	Lost opportunity to withdraw	Comment
22 February 2018	6.00 AM	0	The volumes indicated represent the gas that would have been withdrawn if not for the unplanned outage.
	10.00 am	0	
	2.00 pm	2,503	
	6.00 pm	30,609	
	10.00 pm	7,602	
23 February 2018	6.00 am	36,000	
	10.00 am	16,852	
	2.00 pm	13,411	
	6.00 pm	0	
	10.00 pm	0	

3.1.2 Out-of-merit-order injections

In response to the notice of a threat to system security issued for gas day 23 February 2018, AEMO scheduled the minimum required net injections at the Iona CPP, which included out-of-merit-order injections (offers above the market price) to support demand on the SWP, BLP and WTS. This was consistent with the approach outlined in the market notices issued to participants prior to the planned outage.

The following table lists the scheduled out-of-merit-order injections (in GJ) at the Iona CPP in the operating schedules during the BCS unplanned outage period.

Gas Day	Scheduling Horizon	Out-of-merit-order Injection	Comment
22 February 2018	6.00 am	0	No out-of-merit-order injections were scheduled for the 6.00 pm and 10.00 pm schedules, as there were sufficient in-merit-order injection bids at the Iona CPP.
	10.00 am	0	
	2.00 pm	0	
	6.00 pm	0	
	10.00 pm	0	
23 February 2018	6.00 am	11,497	No out-of-merit-order injections were need for the 2.00 pm schedule, as there were sufficient in-merit-order injection bids at the Iona CPP. No out-of-merit-order injections were needed for the 6.00 pm and 10.00 pm schedules, as the outage had concluded and BCS was restored to normal operations after 15.00 hrs.
	10.00 am	2,683	
	2.00 pm	0	
	6.00 pm	0	
	10.00 pm	0	

4 Costs of intervention

4.1 Total Ancillary Payments and Uplift Payments

The market impact resulting from a threat to system security is in the form of additional ancillary payments and corresponding uplift payments.

The following table lists these payments by type for 23 February 2018.

Gas Day	Ancillary Payments (\$)	Total Uplift Payments (\$)
23 February 2018	4,427	4,427

The uplift payments can either be attributed to the Declared Transmission System Service Provider (DTSSP) or Market Participants. This is discussed in more detail in Section 5.

5 Adequacy of Part 19 of the NGR

In respect of this event, AEMO has assessed the application and adequacy of NGR provisions relating to maintenance approval, uplift allocation, market notices, and this intervention report.

5.1 Maintenance approval

NGR 326(1) requires AEMO to coordinate maintenance to ensure that system security is not threatened, while NGR 326(4) requires AEMO and service providers to cooperate to minimise any threat to system security that would likely result from proposed maintenance.

In this case, AEMO had approved the planned maintenance to go ahead on 22 February as originally planned, considering that high GPG demand was unlikely (so the Laverton North Power Station was unlikely to operate) on that day due to the cooler weather forecast for Victoria.

AEMO finds that these NGR provisions were applied correctly in this case, though NGR 326(1) could be better clarified to acknowledge that coordination may not be sufficient to remove all threats to system security associated with planned maintenance activities.

5.2 Uplift allocation

5.2.1 Allocation of uplift to the Declared Transmission System Service Provider

NGR 240(1)(c) requires AEMO to make procedures governing the determination of any ancillary or uplift payments payable by or to each DTSSP and Market Participant. The Wholesale Market Uplift Payment Procedures (Victoria), clause 2.1.1(b), provides that where ancillary payments are payable in respect of a gas day, congestion uplift payments will be allocated to a DTSSP where, subject to clause 2.1.3, the DTSSP fails to provide the agreed system capacity under its service envelope agreement (SEA) with AEMO.

Discussions are underway with APA to establish if this event constitutes a failure to deliver the service envelope as per section 4 of the SEA¹. Until the outcome is known, uplift quantities and payments are calculated as if the DTSSP uplift is zero. This means that Market Participants can bear costs that may not necessarily be attributed to them for an unquantified period of time.

Issues can also be encountered if the negotiation process between AEMO and the DTSSP is protracted and it escalates to a Dispute Resolution Process. If a dispute has not been resolved by 118 days after the relevant billing period, it would result in the DTSSP uplift not being included in the revision of the settlement statement. After that point in time, any change to the statement would need to be material for a Special Revised Statement to be issued as per the Gas Market Settlement Revision Guideline (\$30,000 for an individual Market Participant or \$60,000 across the market).

5.2.2 Adequacy of Ancillary Payment Procedures

Under the Wholesale Market Ancillary Payment Procedures (Victoria), clause 7.4.4, requires a Market Participant to return the ancillary payment it receives from earlier schedules when “constrained on” gas is no longer required. This can result in a Market Participant returning a greater ancillary payment than it receives in the first place, which is what occurred during this event.

AEMO views this outcome to be inefficient and the design of this feature should be reviewed to ensure that equitable outcomes are achieved for Market Participants.

¹ APA. APA VTS - SD - APAVTS&AEMO - Service Envelope Agreement Revision - 29130813 - Public.pdf. Available at: <https://www.aer.gov.au/system/files/Supporting%20Material%20-%201%20-%20Introduction%20-%20Public.zip>. Viewed: 6 March 2018.

5.3 Market Notices

NGR 341(1) requires that when AEMO identifies a potential threat to system security, it must notify registered participants as soon as practicable – including details of the nature and location of potential threat, and AEMO's estimate about whether intervention will be required.

On 22 February 2018, AEMO held an industry conference to inform participants of the situation.

AEMO notified the market that compression into SWP would be unavailable due to an unplanned outage of the BCS, seeking a market response to the threat to system security.

AEMO also issued market notices relating to:

- placing an OS-only constraint at Iona CPP for gas days 22–25 February to reduce controllable withdrawals to 0 GJ/hr for the BCS outage;
- issuing a notice of a threat to system security and scheduling out-of-merit-order injections at Iona CPP;
- ceasing the need for out-of-merit-order injections at Iona CPP;
- the return to service of BCS, ending the threat to system security; and
- removal of the OS-only constraint at Iona CPP.

Further details regarding the market notices that were issued can be found in Appendix A – Chronology.

AEMO finds that these NGR provisions are generally adequate, and were applied correctly in this case.

5.4 Intervention Report Timing

NGR 351 places an obligation on AEMO to publish an Intervention Report within 10 business days after the event. This requirement limits AEMO's ability to conduct a thorough investigation into the circumstances of the event, given the requirement to assess:

- the adequacy of the Rules;
- the appropriateness of actions taken by AEMO; and
- the costs incurred by AEMO and Registered participants as a consequence of responding to the event or events.

In order to allow sufficient time for investigation and subsequent report preparation, the requirement to prepare this report should be aligned with NGR 355 to be:

- within 10 business days notify Participants of this event; and
- within 20 business days following the issue of the final statement for that gas day, publish an Intervention Report.

6 Conclusion

AEMO issued a notice of threat to system security in the Victorian DWGM for gas day 23 February 2018 during an unplanned outage of the BCS, due to insufficient market response injections from the Iona CPP to meet the demand in western Victoria.

On 23 February 2018, AEMO scheduled out-of-merit-order injections at the 6.00 am and 10.00 am schedules. This resulted in approximately \$4,427 of additional ancillary and uplift payments.

Following this event, AEMO has assessed the application and adequacy of associated NGR provisions, and finds that these provisions were applied correctly. AEMO has highlighted a number of provisions within the Rules that appear to be inadequate and require further investigation.

Please direct any feedback or questions regarding this report to GasMarket.Monitoring@aemo.com.au.

Appendix A – Chronology

Date/Time (AEST)	Event/ Action	Details
20 February 2018	Market notice	AEMO issued a SWN indicating a full BCS outage scheduled from 6.00 hrs until 10.00 hrs on gas day 22 Feb 2018.
22 February 2018 9.00 hrs	BCS outage	APA advised AEMO that the testing of compressors delayed until 12.00 hrs (requested for BCS outage extension).
22 February 2018 11.40 hrs	BCS outage	APA advised that they needed an additional extension until further notice due to an exhaust stack leak that effected all units.
22 February 2018 13.04 hrs	Market notice	AEMO issued a market notice (for the 2.00 pm schedule) that an OS-only constraint applied at Iona CPP to restrict the withdrawal quantity to 0 GJ/h from 14.00 hrs until 17.00 hrs for gas day 22 February 2018 due to an unplanned BCS outage.
22 February 2018 16.00 hrs	Industry conference	AEMO held an industry conference to inform Market Participants about the unplanned BCS outage, operation and scheduling strategies, and potential market impacts.
22 February 2018 16.22 hrs	Market notice	AEMO issued a market notice (for the 6.00 pm and 10.00 pm schedules) that an OS-only constraint applied at Iona CPP to restrict withdrawal quantity to 0 GJ/h from 18.00 for gas day 22 February 2018 due to the unplanned BCS outage.
22 February 2018 17.10 hrs	Market notice	AEMO issued a market notice indicating that BCS will be unavailable from 22 February 2018 until further notice due to the unplanned outage, with a detailed SWN attachment. Participants were advised that net injections may be required to maintain system security.
22 February 2018 19.20 hrs	Schedule	AEMO issued a market notice (for gas day 23 February 2018) that an OS-only constraint applied at Iona CPP meter to restrict the total withdrawal quantity to 0 GJ/day on gas day 23 February 2018 due to the BCS unplanned outage.
22 February 2018 22.46 hrs	Market notice	AEMO issued a market notice indicating that 11.5 TJ of out-of-merit-order injections was scheduled (Day+1 schedule) at Iona CPP for gas day 23 February 2018 and AEMO was seeking a market response to support the BCS unplanned outage.
23 February 2018 05.14 hrs	Market notice	AEMO issued a market notice indicating a threat to system security due to the BCS outage and scheduled 11.5 TJ of out-of-merit-order injections at Iona CPP for 23 February 2018 (current day 6.00 am schedule).
23 February 2018 07.19 hrs	Market notice	AEMO issued a market notice indicating 11.5 TJ of scheduled out-of-merit-order INJ at Iona CPP for gas day 24 February 2018 (Day+1 schedule) and is seeking a market response to support the BCS unplanned outage.
23 February 2018 7.26 hrs	Market notice	AEMO issued a market notice applying an OS-only constraint at Iona CPP to restrict total withdrawal quantity to 0 GJ/d on gas day 24 February 2018 due to BCS unplanned outage.
23 February 2018 09.32 hrs	Market notice	AEMO issued a market notice indicating 2.7 TJ of scheduled out-of-merit-order injections at Iona CPP for gas day 23 February 2018 (10.00 am schedule). Threat to system security notice for BCS outage remains in effect.
23 February 2018 11.09 hrs	Market notice	AEMO issued a market notice indicating 3.5 TJ of scheduled out-of-merit-order injections at Iona CPP for 25 February 2018 and is seeking a market response to support BCS outage.

Date/Time (AEST)	Event/ Action	Details
23 February 2018 11.12 hrs	Market notice	AEMO issued a market notice applying an OS-only constraint at Iona CPP to restrict total withdrawal quantity to 0 GJ/d on gas day 25 February 2018 due to BCS unplanned outage.
23 February 2018 13.31 hrs	Market notice	AEMO issued a market notice removing out-of-merit-order gas injections at Iona CPP for gas day 23 February 2018. Threat to system security notice for the BCS unplanned outage remains in effect.
23 February 2018 15.00 hrs	BCS outage	APA returned unit 12 to service at 15.00 hrs on 23 February 2018
23 February 2018 15.13 hrs	Market notice	AEMO issued a market notice indicating that APA has returned BCS unit 12 only to service at 15.00 23 February 2018. The threat to system security for the BCS unplanned outage has ended. SWP withdrawal capacity may still be affected.
23 February 2018 19.20 hrs	Market notice	AEMO issued a market notice indicating that removal of the controllable withdrawal restriction to 0 GJ/hr at Iona CPP for gas day 23 February 2018.
23 February 2018 22.03 hrs	Market Notice	AEMO issued a market notice removing the OS-only constraint at Iona CPP net withdrawals on 24 February 2018.
24 February 2018 03.04 hrs	Market Notice	AEMO issued a market notice removing the OS-only constraint at Iona CPP net withdrawals on 25 February 2018.
24 February 2018 10.25 hrs	BCS Outage	APA returned unit 11 to service at 10.25 hrs on 24 February 2018.