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Dear Darren

Brooklyn Compressor Station – Units 10 and 11 Cooler Upgrade Project

APA have advised AEMO of the intention to upgrade the coolers for compressor units 10 and 11 at the Brooklyn Compressor Station (BCS) commencing in September 2015. The Service Envelope Agreement (SEA) between APA and AEMO requires two Centaur compressors to be available. This letter provides interim guidance to APA to assist with the preparatory work for this activity.

The proposed work at BCS is understood to include: a full station outage of three days to replace isolation valves on compressor units 10 and 11; a partial station outage of three days; and a period of approximately three months when compressor units 10 and 11 would both be unavailable. It is understood that compressor unit 12 would remain fully available except during the full station outage. The proposed period for this work is September 2015 to January 2016 inclusive.

Under Rule 326(1) of the National Gas Rules (NGR), AEMO must coordinate all maintenance on the Victorian Declared Transmission System (DTS). AEMO has considered its ability to maintain system security and support expected system and non-system demand during the proposed BCS work. AEMO's consideration also includes proposed plant maintenance activities, forecast South West Pipeline (SWP) withdrawals, and Laverton North gas power generation (GPG) demand.

AEMO's preliminary risk assessment has identified a threat to system security if the full station outage occurred in September, and if compressor units 10 and 11 were both unavailable for an extended period. Therefore, AEMO requires APA to delay the start of the work until October, and to maintain the availability of either unit 10 or 11, in addition to unit 12 during the proposed BCS work.

System Security

September is considered to be a 'winter' month for AEMO's demand forecast planning purposes. The forecasted 1-in-2 and 1-in-20 Peak System Demand Days for September are the same as for June, July and August. This information is included in the 2015 Victorian Gas Planning Review (VGPR) that was released on 13 April 2015 and is available on AEMO's website.

The BCS plays an important role during high demand periods in meeting demand in the Ballarat system withdrawal zone. Either two Saturn compressors (units 8 and 9) or one Centaur compressor (units 10, 11 or 12) are needed to support Ballarat demand on high demand days.

Based on the requirement to support Ballarat demand during the winter period, and the proposed gas plant outage detailed below, the BCS full station outage to replace the isolation valves on units 10 and 11 will need to be deferred until a low demand period in October.

Gas Plant Outages

In addition to the above, EnergyAustralia are planning an outage of the Iona Underground Gas Storage Plant (Iona GS) during the second half of September. AEMO is currently reviewing the system security implications of this proposed outage. It is possible that this outage will need to be deferred into the October to November "shoulder" period.

An Iona GS outage reduces the availability and reliability of injections into the SWP at Port Campbell. An Otway Gas Plant outage is also planned for November. A BCS Centaur unit is required to support demand in the Geelong and Western system withdrawal zones when there are no SWP injections scheduled.

If BCS unit 12 was the only Centaur unit available, an outage of this machine during the shoulder period may result in a threat to system security if no SWP injections were scheduled. Out of merit order SWP injections would need to be scheduled, which will generate Ancillary Payments and Uplift charges.

SWP Withdrawals

SWP withdrawals at Iona GS are required to support the filling of the storage reservoirs to ensure that sufficient gas supplies are available for winter 2016. SWP withdrawals at Iona GS during summer 2014-15 were lower than expected due to low reservoir withdrawals during winter 2014.

The reduced winter 2014 Iona GS reservoir withdrawals were due to high flows into Victoria from New South Wales. This increased gas supply was due to the ramp-up of Queensland coal seam gas production associated with the commissioning of the first Liquefied Natural Gas (LNG) production train in Gladstone. This situation has also reduced the impact of declining off-shore gas production at the Port Campbell gas plants.

Two more LNG production trains are expected to begin production this year. The GLNG and APLNG projects have announced that they will start up prior to September and before the end of September respectively.

A considerable change to the Victorian gas supply balance is expected following the start-up of these LNG trains. This is expected to result in higher storage withdrawals and therefore increased SWP withdrawal flows to refill storage after this winter. SWP withdrawals of more than 50 TJ per day require the running of two BCS Centaur compressors.

Through the provision of a temporary cooler on unit 11, AEMO understands that this compressor will be available between 6am and 6pm each day to enable two compressor operation to support SWP withdrawals at Iona GS.

Laverton North GPG Demand

The operation of one BCS Centaur compressor usually sufficient to supply gas to the Laverton North Power Station. However, there are conditions where the operation of up to two BCS

Centaur compressors is required to supply the power station when it is generating at full capacity and there are no injections into the SWP at Port Campbell.

From late December until at least the end of February, higher demands in the National Electricity Market (NEM) due to air conditioning loads increases the probability that GPG units such as the Laverton North Power Station will be required to operate. The 13-17 January 2014 heatwave is an example of when reliable GPG operation is required to support electricity demand.

A second BCS Centaur unit needs to be available to decrease the likelihood of AEMO being unable to support Laverton North operation if unit 12 is not available.

Temporary Cooling for Unit 11

The use temporary cooling facilities on BCS unit 11 will enable two Centaur units to be available during the Cooler Upgrade Project. AEMO understands that unit 11 will be made available within four hours if unit 12 is unavailable, and that unit 11 will also be available between 6pm and 6am if required to support SWP withdrawal flows.

This will reduce the likelihood of not having at least one Centaur compressor available to maintain system security and support Laverton North GPG operation; and the availability of two Centaur compressors will support high SWP withdrawal flows overnight.

Conclusion

AEMO views the likelihood and consequence of BCS unit 12 being unavailable during the BCS Cooler Upgrade Project as unacceptable. While AEMO has worked with APA to establish the timing of this project, the four month duration that starts in October 2015 runs through until at least January 2016 still results in a number of situations where market and system security impacts exist.

The provision of temporary cooling facilities on BCS unit 11 means that the compressor availability requirement in the SEA will be met. The result would be a low risk of being unable to maintain system security, as well as support SWP withdrawals and generation at the Laverton North Power Station.

Therefore, AEMO requests that APA to proceed with the installation of a temporary cooler on BCS unit 11. AEMO will continue to assist APA with the BCS Cooler Upgrade Project.

Yours sincerely,



Matthew Clemow
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