

NEED/OPPORTUNITY STATEMENT (NOS)



Making the Grid More Resilient - Upgrading Wave Trap for
Wagga Line 99X Ratings Augmentation

NOS- 000000001426 revision 2.0

Ellipse project description:

TRIM file: [TRIM No]

Project reason: Upgrading Wave Trap for Line 99X – Wagga 330 to Wagga 132 Ratings Augmentation

Project category: Prescribed - NCIPAP

Approvals

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Reviewed/Endorsed	Jahan Peiris	Network Modelling & Performance Manager
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Approved	Nalin Pahalawaththa	Manager/Power System Analysis
Date submitted for approval	27 October 2016	

1. Background for Line 99X

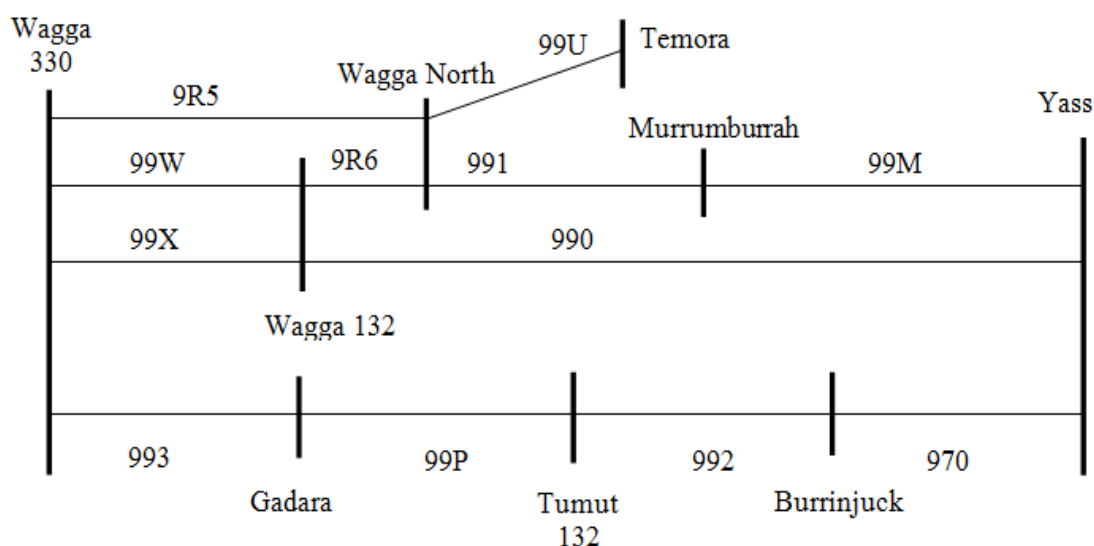
This proposal forms part of the Network Capability Incentive Parameter Action Plan (NCIPAP), for the 2018/19 to 2022/23 regulatory control period. The NCIPAP portion of the STPIS described in section 5 of the STPIS guideline¹ is a plan consisting of a suite of small projects aimed at improving the capability of transmission assets through operational expenditure and minor capital expenditure on the transmission network which results in:

- > Improved capability of those elements of the transmission system most important to determining spot prices;
OR
- > Improved capability of the transmission system at times when Transmission Network Users place greatest value on the reliability of the transmission system.

This Need is of high *priority* to improve the limit of the injection point for the benefit of the Transmission Network Users. This high *priority* Need is consistent with the requirements of the clause 5.2(a)(2) in section 5 of the STPIS guideline and is consistent with the objectives of the NCIPAP scheme².

At times of high NSW import from Snowy/Victoria, a trip of either line 99X or 99W from Wagga 330 kV to Wagga 132 kV may result in an overload of the remaining in service line. An automatic SCADA-based Wagga 132 line overload control scheme monitors the flow on these lines, and if an overload is detected, will open line 990 at Yass and line 991 at Murrumburrah. This will result in radialising of the supply to Murrumburrah. The level of overload at which the scheme operates is selectable. The lowest level which corresponds with the ratings of line 99X is 137 MVA due to wave trap at Wagga 132.

At present, radialisation of supply to Murrumburrah can occur when 137MVA is reached on any of line 99X and 99W.



¹ AER, Final Electricity Transmission Network Service Providers Service Target Performance Incentive Scheme, Version 5 October 2015.

² Explanatory statement section 5.3.1 - AER, Draft Electricity Transmission Network Service Providers Service Target Performance Incentive Scheme, Version 5 June 2015.

2. Need/opportunity for Line 99X

This limitation of radialisation of supply can be significantly improved up to 184 MVA by upgrading the wave trap at Wagga 132 on the line 99X.

The replacement of the wave trap is cost/benefit efficient. It will not only increase reliability benefit to consumer, but also especially boost market benefit of Wagga - Yass transmission capacity at times of high NSW import from Snowy/Victoria.

Therefore, with this proposed *priority project*, the post contingency capacity can be improved as follows:

Option	Post contingency (for the trip of the line 99W or 99X) capacity
Do nothing	137 MVA (due to wave trap at Wagga 132 on line 99X)
Upgrade of line 99X wave trap	184 MVA (due to wave trap at Wagga 132 on line 99W)

3. Related needs/opportunities

Nil

4. Recommendation

It is recommended that the line 99X wave trap at Wagga 132 be replaced in order to allow the Wagga 132 kV overload control scheme to operate at a higher overload threshold.

Attachment 1 Risk costs summary

Current Option Assessment - Risk Summary

Project Name: Wagga132kV TL99X Rating Upgrade

Option Name: 1426 - Base case

Option Assessment Name: 1426 - Base case - Assessment 1

Rev Reset Period: Next (2018-23)



Major Component	No.	Minor Component	Sel. Hazardous Event	LoC x CoF (\$M)	Failure Mechanism	NoxLoC xCoF (\$M)	PoF (Yr 1)	Total Risk (\$M)	Risk (\$M) (Rel)	Risk (\$M) (Op)	Risk (\$M) (Fin)	Risk (\$M) (Peo)	Risk (\$M) (Env)	Risk (\$M) (Rep)
Conductor	1	Conductor (inc Joints)	Unplanned Outage - HV (Conductor)	\$31.20	Break	\$31.20	1.16%	\$0.36	\$0.36					\$0.01
				\$31.20		\$31.20		\$0.36	\$0.36					\$0.01

Total VCR Risk: \$0.36

Total ENS Risk: