

ASP Safety Alert Network Compliance and Authorisations

Alert Number: SA19_19

2 December 2019

Subject: Pole failure caused by change of pole loading

Key Messages

Removing overhead conductors in any direction when there are other conductors in tension on the opposite side of a pole is deemed as “high stress work” on poles and adequate assessment and controls must be applied

Incident Summary

To assist in staging the scope of works, an ASP1 changed the construction on a pole from a straight-through to a termination construction and removed the conductors from one side of the pole. Approximately two weeks after these changes were made the pole failed and fell to the ground. On inspection, significant rot was observed in the base of the pole. Fortunately, no persons were injured as a result of this incident.

Expectations

The type of work being carried out on a pole is indicative of the stress that will be placed on the pole. Information on stresses that can be applied to poles due to loading or altering the load on a pole can be found in NS146 clause 4.4.

Telecommunications work, linework for an EWP, System Operation work and some types of service work may not place high stress on a pole, however, you must carefully assess how the work will be carried out and complete appropriate pole inspections before arriving at this decision.

Most other types of work or alterations, e.g. linework from a platform or change of construction type, could stress a pole sufficiently that the pole may fail if in a weakened condition and therefore must be dug out and inspected accordingly.

The risk assessment of the work and the agreed work methodology and controls must be clearly stated on the pre-work hazard assessment check of the workgroup completing the works.



Figure 1: Internal pole decay



Figure 2: Original pole location

NS146 – 5.3.2 ‘High stress work’ on poles

Work that places ‘high stress’ on a pole is any work that increases the total load (resultant of the vector sum of forces) on a pole. Dynamic or sudden changes in loading such as that caused by cutting away or dropping conductors that are in tension will place significant high stress loads on poles.

Work that may result in high stress being applied to poles includes:

- Work where the pole’s attached construction will be changed;
- Where the attached load on the pole will be changed;
- Where the direction of the attached load will be changed.

Examples of high stress work include:

- The addition of telecommunication cables such as Optus overhead infrastructure can significantly alter the resultant load on a pole;
- Removing overhead conductors in any direction (regardless of size of the conductor) when there are other conductors in tension on the opposite side of the pole and adding conductors where the pole is not supported against the pull;
- Changing or replacing an existing service wire with a new service wire (when there are other service wires in tension on the opposite side of the pole), which will involve the old service wire being dropped temporarily on one side of the pole and a new service wire being pulled up;
- Climbing or working from a private service pole where the load applied by climbing is not supported (e.g. by service conductors);
- Tensioning a service connected to a private service pole where the pole is a termination pole such as an "A" pole (even a small increase in tension may cause a degraded customer pole to fail)

Action Required

ASPs to communicate to all authorised employees, supervisors and project managers the requirements when existing pole loadings are intended to be altered.

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Useful Links

ASP information : <https://www.ausgrid.com.au/ASPs-and-Contractors>

General Information notices : <https://www.ausgrid.com.au/ASPs-and-Contractors/News-and-alerts/GI-notice>

Safety Alerts : <https://www.ausgrid.com.au/ASPs-and-Contractors/News-and-alerts/Safety-alerts>