



Every employee and contractor, working for Northern Powergrid, should go home at the end of each shift uninjured and in good health after a productive days work

## Wood Poles treated with AC500

The safety newsflash is to make all linesmen aware of **additional precautions and controls that are needed when working on** wood poles treated with AC500 preservative. The photos below are from a recent incident involving a premature pole failure associated with an AC500 treated LV pole. Despite the pole appearing and sounding solid above ground, significant decay was found below ground level rendering the pole unstable and dangerous.



The following risk control measures should be taken by all linesmen prior to working on poles treated with AC500 to assess the stability/integrity of the pole.

### Actions for Linesman

<b>1</b>	Check the integrity of the pole above ground using the hammer test, prodding test and visual tests as detailed in NSP/004/112. Poles treated with AC500 can be identified by the pole scarf marks or engraved label which will indicate a pole treatment code using the letters "AC". <u>The normal above ground inspection alone is insufficient to permit work on an AC500 treated pole – additional precautions are required.</u>
<b>2</b>	In line with working at height hierarchy, work should be carried out from a MEWP wherever practicable. Climbing of poles treated with AC500 is prohibited without further robust checks to confirm the poles integrity below ground.
<b>3</b>	In addition the only pole top works that can be carried out from a MEWP are where it is assessed that there will not be any significant changes in mechanical loadings on the pole and the conductor tensions will not be disturbed. If these requirements cannot be met then the pole must be subjected to the below ground inspection prior to the works being commenced.
<b>4</b>	If climbing is the only available method, poles treated with AC500 must be inspected below ground level by excavating a min of 300mm below ground and repeating the same checks below ground for signs of decay. <u>Only after confirming that the pole is in sound condition below ground level may the pole be climbed.</u>

## Newsflash - 2018 03

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### Background to AC500 Pole Treatment

A customer reported an LV pole swaying in the wind which resulted in our staff attending site to deal with the report. Site staff confirmed stability issues with the pole which resulted in the pole being jacked out, and inspected. As can be seen from the photographs, the decay process has taken place below the ground line. An initial visual inspection of the pole appeared to show it to be in good condition. However the pole below ground level was severely decayed. The wood from the ground level mark was checked and all the outer softwood fell off the inner heartwood in chunks. Given that the majority of the pole strength resides in the outer ring of the pole, it can be seen that the residual strength of the pole was severely compromised.

**The outcome of the subsequent investigation is that Northern Powergrid has a potential issue with 16,000 AC500 treated poles installed during the period 2007 – 2014.**

1	Northern Powergrid adopted AC500 as the replacement preservative treatment for Copper Chromate Arsenic (CCA) which had previously been our preferred treatment for LV poles. This change away from CCA was only due to its suspension of use under the Biocides Directive in 2006.
2	Whilst CCA has been in use since the 1970's (often recognizable by the greenish tint it imparted to the timber) with a longevity of protection equivalent to that of creosote but without the issues associated with bleeding poles in public places, unfortunately it seems the same cannot be said for AC500 treatment.
3	At its introduction in 2007 as the default LV pole treatment, AC500 was expected to provide an estimated life of 30-40 years. However by August 2011 information shared with Energy Networks Association members started to indicate shorter than anticipated asset life expectancy of between 15 and 30 years. As a result Northern Powergrid stopped using AC500 returning back to creosote (except for LV poles installed in parks, playgrounds and near schools where creosote treated poles are not allowed under the REACH regulations)
4	Usage of LV poles treated with AC500 during the 2007 – 2011 resulted in circa 13,000 poles being installed.
5	The industry also experienced a short term need to restart using AC500 poles in Q4 2012 until approximately Q3 2013 due to the industry wide creosote shortage and a further 3,000 poles were installed taking the total population of AC500 treated poles within Northern Powergrid to around 16,000 poles.

Northern Powergrid is in the process of initiating the 10 yearly wood pole inspection programme. As part of this inspection programme arrangements are being made that will require all AC500 poles to be subjected to this additional test requirement. The objectives of the inspection program are to inspect all overhead line supports within a two year period.

**Please use the knowledge of this incident to influence your ongoing risk assessment as you carry out your daily duties, particularly in poor weather conditions.**

Managers should ensure a copy of this brief is issued to all staff who do not have access to email as soon as possible