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Target Audience:
All SG Electrical Specialist Inspectors

WORK AT HEIGHTS PROJECT IN THE ELECTRICITY SUPPLY INDUSTRY APRIL 2006 – MARCH 2007

The new work at heights legislation includes detailed requirements on the use of work positioning belts. Such equipment is used extensively by the Electricity Supply Industry, for working up poles. The project asks SG Electrical Specialist Inspectors to carry out a series of visits to ensure that all Distribution Network Operators, and contractors working on their behalf, are complying with the minimum legal standard, and to help encourage and develop best practice. Where appropriate, Occupational Health Inspectors may be asked for advice on MSD issues.

INTRODUCTION

GENERAL

- 1 There have been fatal and major injuries from falls during pole work. The new Work at Height Regulations 2005, impose duties that have a direct bearing on how this work should now be carried out.
- 2 Historically, wooden poles were climbed using climbing irons or ladders. The simplest form of climbing irons consisted of spurs on the instep of the climber's boot, which were driven into the pole. During climbing the arms were used to grip the pole. In order to free the linesman's hands at the top of the pole a work-positioning belt was used. This is a strap, which is passed around the pole, allowing the linesman to lean backwards.
- 3 During both climbing and at the work position, reliance against falling was placed on the climbing irons gripping. Traditionally, fall protection devices were not used in the work position. The work-positioning belt itself did not necessarily prevent a fall. Although suitable for climbing a clean pole, i.e. one that is free of steps and pole furniture, the system had limitations for cluttered poles.

PERIOD 2001 – 2005

- 4 The Sector explained to the industry that our standards would be based on the requirements laid down in the Construction (Health, Safety and Welfare) Regulations 1996, (CHSW Regulations). These regulations require suitable and sufficient steps

be taken to prevent, so far as is reasonably practicable, any person falling, and lay down a hierarchy of measures that must be followed. For the majority of jobs undertaken this means the use of a mobile elevating work platform (MEWP). Regulation 6(3)(d) indicates that if this is not practicable, or due to the nature or the short duration of the work, is not reasonably practicable, then a suitable fall arrest system is required.

5 In response, the Electricity Association (EA) set up a task force to identify suitable equipment for remaining attached during both climbing and working on poles. (SIM 05/2002/51 refers.) Work was undertaken with appropriate manufacturers to develop their equipment. Initially there were no suitable systems available, so manufacturers provided prototype devices, which were duly tested and modified. The various types of equipment assessed are detailed in the EA Notes of Guidance Part II entitled **Management of fall risks**. These Notes of Guidance were revised and re-issued by the Energy Networks Association in November 2002. The following paragraphs describe the equipment tested and accepted by the task force as suitable. All the attachment systems are intended to be used with a full body harness.

6 Inspectors should appreciate that injuries may still occur as a result of a fall whilst using an attachment system as impact against the pole is likely, which is why the use of a MEWP should always be the first option. However, the potential injuries caused during a fall whilst using fall arrest equipment must be compared with those that could be inflicted by a free fall to the ground.

POLE CHOKER

7 It was decided that a clean pole could be climbed using climbing irons together with a choked belt. A choked belt is similar to a work positioning belt except that it has an additional strap between the wearer and the pole. If the climber falls the strap tightens onto the pole arresting the fall. In the case of the choked belt, the task force had to develop suitable test criteria as no national or EN standard was available. These criteria accept there will be some slippage before the full choke is applied.

POLE CHOKER AND LANYARD(S)

8 On a cluttered pole the choked belt cannot be passed over obstructions and has to be detached. However, the climber can use a combination of the choked belt and an energy absorbing lanyard(s). On reaching the obstruction the climber would connect the lanyard to a suitable support. They would then disconnect the choked belt, climb over the obstruction, reconnect the belt and release the lanyard. The connections of the choked belt to the harness have been carefully designed to ensure it cannot be accidentally released.

9 Alternatively, it was agreed that it might be possible to climb above those obstacles lower down the pole using a ladder, after which the choked belt would be used. It was accepted that the occasional cluttered pole must not be used as

justification for free climbing.

VERTICAL LIFELINE AND FALL ARREST DEVICE (ROPE GRAB)

10 Another method considered was the use of a temporary vertical lifeline connected to a fall arrest device (rope grab). Tests have been undertaken to show that the cross arms, which carry the conductors, are strong enough to act as an anchorage point in the event of a fall. Even at the furthest distance from the pole the cross arm proved adequate. However, this would mean attaching the rope close to what could be live conductors or be impractical because this could require encroachment within the Safety Distance. It would be difficult to ensure that the rope does not act as a conductor therefore the line should be first made dead. Several devices have been developed to attach or provide a vertical lifeline to the pole.

Another method favoured by the industry, when it can be confirmed the line is dead, is the use of an eyebolt positioned below the conductors.

11 The Sector has no information on how widely, if at all, these types of system have been utilised on poles within the Electricity Supply Industry.

WORK AT HEIGHTS REGULATIONS 2005

12 Regulation 7 requires that collective protection measures be given priority over personal protection measures. As with the earlier CHSW Regulations, this means that for most work on poles, a mobile elevating platform should be used. When using MEWPs the guidance in OC 314/20 **Preventing falls from mobile elevating work platforms** and Information Sheet Misc 614, should be followed.

13 Schedule 5, Part 2 of the regulations deals specifically with work positioning systems, and requires that, where reasonably practicable, a suitable backup system to prevent or arrest a fall, be provided. This requirement will apply whenever a choked belt is being used in work positioning mode, i.e. when the climb is complete, and the belt is being used to support the wearer during the relevant work activity. It has been agreed by the Sector and Construction Division Technology Unit, **that for clean poles**, whenever a choked belt is being used in work position mode, an energy absorbing lanyard should also be attached to a suitably positioned anchorage point. Connecting the lanyard by wrapping around the pole (sometimes referred to as 'choke-hitching') is not a suitable method of attachment, unless there is evidence to suggest that the lanyard has been specifically designed for this purpose. During the actual climb, as long as the choked belt is to the standard laid down in the EA guidance, the back up system does not need to be used.

14 For cluttered poles, it is more difficult to achieve a high standard of protection using a choked belt system. A company's risk assessment should take this into account when deciding whether work should be done from a MEWP. Where this is thought to be unreasonable, vertical lifeline and similar systems should be considered in preference to choked belts, as they can reduce the fall distance and shock loading.

15 The Sector is aware of one company that has introduced a climbing technique for cluttered poles that involves the use of two work positioning belts. (One of the belts is attached around the pole above any obstruction, and the choked belt then removed.) This does not meet the requirements of the legislation, i.e. no energy absorption, and there are concerns over issues such as the belt suffering mechanical damage, and the obstruction being robust enough to provide adequate support in the event of a fall. However, some see it as safer than the use of a choked belt with lanyard for a number of reasons, and so this method of working should not be discounted completely. Again, it is a factor that needs special consideration in the assessment for using a MEWP.

RESCUE

16 Regulation 7(b)(v) imposes a duty to take account of the need for rescue in the event of an emergency. Even when properly attached, in the event of a fall, impact against the pole may cause injury. Climbers may also be taken ill during climbing, or suffer an injury from the work activity. Getting a climber safely down to ground level needs to be achieved as quickly as possible, but rescue in such circumstances is not easy. It is essential that all those involved in pole climbing have well rehearsed rescue procedures in place, and these must take full and proper account of lone working.

INSPECTION PROJECT FOR 2006/7

17 This project requires 50 days proactive inspection of the Electricity Distribution and Transmission industry, by Electrical Inspectors, during the year 2006/07. In addition to their traditional electrical safety inspection work, FFH and MSD should also be targeted. MSD has been included because, where hot stick work is done at poles, it is anticipated that specialist advice from HSE's Occupational Health Inspectors may be required, to a maximum of 5 days contact time.

18 The main objective of this work is to encourage employers in the industry, and their contractors, to improve standards of health and safety generally, thereby contributing towards meeting the PSA targets. By looking at both conventional electrical risks and falls from height, inspectors should be able to identify common failings, and use these examples to push for improvements in all other areas.

19 Using pole climbing as a second topic contributes to programme working, and the timing provides an opportunity to ensure best practice and minimum standards are established.

20 As the new Work at Heights legislation demands that, where reasonably practicable, a MEWP be used in preference to a personal fall protection system, inspectors should closely scrutinise any risk assessment for pole working activities that accepts pole climbing.

21 Where pole climbing is justified, and clean poles are involved, inspectors should ensure that a suitable fall arrest lanyard, with energy absorber, is being used whenever the choked belt is operating in work positioning mode. Although in most

cases this will be at the top of the pole, for some activities it may be lower down. Means of attachment should be readily available, except in those cases where the climber is using a lanyard specifically designed for wrapping around the pole.

22 For climbing poles with obstructions, inspectors are asked to see the relevant risk assessment. This should be challenged where fall arrest lanyards or a second work positioning belt are being used, as an alternative to vertical lifeline systems, and the latter appear to be a reasonably practicable alternative. (The vertical lifeline system usually involves shorter drop distances, and so places less strain on the body in the event of a fall. It also provides fall arrest throughout the climb.)

[Check inspection regime for equipment – Refer to INDG367. Advice also available in BS8437]

23 Details of both good and bad practice should be forwarded to the Sector, with photographs where possible, to assist negotiations with the industry over best practice and minimum standards.

24 Wherever choked belts are being used, inspectors should check to ensure they meet the latest ENA standards.

25 Inspectors should ensure that rescue procedures are in place, which take account of problems relating to lone working, and that they have been successfully rehearsed.

OUTCOMES

- (1) Reinvigorate the industry strategy leading to a reversal of the current upward trend in incidence rates for both accidents and days lost.
- (2) The adoption of a more positive attitude towards health and safety within the contracting community serving the utilities
- (3) Accrue information on pole climbing techniques, with a view to getting the industry to publish best practice, and agree minimum standards.

Note: Although the original intention was to include tower climbing, it has since been decided to restrict this work to poles. If issues relating to work on towers are encountered, they should be raised directly with the Sector.

Advice on general fall protection issues may be sought from Construction SGs

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