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Risk Analysis & Assessment

HSD1 - Assignment 1

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Activity: Working in all weather conditions

Hazard: Injury whilst driving due to inclement weather

Possible Control Measures

- Review of weather forecast in advance, no activity to be conducted if adverse conditions or work plans amended accordingly
- Snow chains applied to vehicle wheels in case of ice and snow to prevent driving injury
- Advanced driver training for weather

Recommended Control Measures

- Review weather conditions in advance and plan work accordingly

Justification

It is not possible to “beat” the weather, simply to adapt as appropriate. If an engineer is expected to work in a rural environment on their own then awareness of the location is key, as is looking ahead to identify weather-based risks, such as steep hills, rivers and more. As on-site access is always going to be required, it will be impossible to fully eliminate this risk.

Review of weather forecast is straight forwards given modern technology. Head office can issue alerts to engineers, whilst engineers can also monitor weather apps/websites via smart phones if they are travelling. The cost involved is negligible given engineers are issued work laptops and phones. Jobs are issued centrally so the same office can also review weather and advise accordingly

Snow chains applied to vehicles is expensive and does not eliminate the risk, only marginally reduces it. If roads are icy enough to warrant this level of activity, the weather is likely too dangerous to work in so this option would increase exposure to weather related risks. Snow chains would not help in wet weather, which is more likely to occur in the UK, so the costs of this versus practical risk reduction do not balance. A better approach would be to have access to some weather specific vehicles as required, rather than convert all vehicles for “all weather”

Advanced driver training would be expensive, and not reduce the risk as other drivers on the road could contribute to accidents and may not have training. Given the UK weather tends to be consistent and “mild” in terms of storms (compared to hurricanes in other countries) regular driver training would likely suffice – non-employees of the company would still drive in poor weather without extra training. Additionally, no training can negate the impact of high winds, so the range of weather risk would still exist.

Hazard: Falling from telegraph pole, whilst climbing or performing repair, due to adverse weather

Potential Control Measures

- Review of weather forecast in advance, no activity to be conducted if adverse conditions or work plans amended accordingly
- Climbing telegraph poles not permitted

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- Use of powered access equipment

Recommended Control Measures

- Review weather conditions in advance and plan work accordingly

Justification

As before, the likelihood of this is low in terms of occurrence, although it would have a high impact. Planning the task thoroughly and identifying the safest options, considering the training and equipment issued, will help control this risk in conjunction with the specified controls. This risk will remain an implicit one until telephone poles are eliminated.

Review of weather forecast is simple given the equipment issued to engineers would allow them to check weather reports via smart phones. If there are high winds / heavy rain or reduced visibility / risk of snow or ice, then poles should not be climbed in any circumstances. For moderate conditions, appropriate precautions should be taken such as increased anchor points used, spikes for climbing, wet weather gear (PPE) and so forth. As there is minimal cost, this approach should be the default.

Climbing telegraph poles not permitted is not practical as no faults would ever be fixed if the weather is not perfect. The first control of reviewing weather and amending plans accordingly would encompass this control implicitly rather than a blanket ban on climbing poles.

Use of powered access equipment may help reduce risks due to slippery poles caused by rain, but weather could still adversely affect powered access equipment. High winds would prohibit its use, and icy roads could make deploying equipment dangerous. Poor weather may also affect location access, meaning powered equipment cannot even be used in the location. This control should be used selectively depending on weather and specific activity.

Hazard: Illness due to exposure (heat / cold)

Potential Control Measures

- Issue appropriate clothing
- Guidelines for fluid intake / expenses

Recommended Control Measures

- Issue appropriate clothing
- Training in looking after self in cold / hot weather

Justification

A lot of this will come down to duty of care and common sense, as everyone reacts to temperatures differently. Using weather forecasts, providing appropriate clothing and procedures will largely control and minimise this risk.

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Issue appropriate clothing is sensible but will vary with weather. In hot weather, less clothing tends to be worn. This would increase risks due to cuts etc. from sharp objects as there would be less barriers between object and skin. In cold weather, bulky clothing could restrict mobility which would be dangerous when climbing. A compromise would be to issue waterproofs / warm coats in addition to a standard uniform and have a sensible code of conduct for hot weather in terms of not wearing shorts but allowing short-sleeve shirts for example.

Training is a cost-effective solution for this hazard as it simply requires an internal approach rather than a formal, expensive, qualification. In this case it could simply include reminders to drink water during hot temperatures, or to drink hot drinks in cold weathers. Appropriate clothing guidance would also be included within this, as described above. This control could be implemented during an induction process, then reminders sent out as required – e.g. in winter remind to “keep warm”

Activity: Climbing telegraph pole

Hazard: Falling from telegraph pole, whilst climbing or performing repair

Potential Control Measures

- Issue climbing equipment and train engineers to use
- No lone working at height permitted
- Use of powered access equipment, e.g. cherry picker
- Cease use of telegraph poles
- Ban climbing telegraph poles

Recommended Control Measures

- Issue climbing equipment and train engineers to use
- No lone working (where appropriate)
- Use of powered access equipment, e.g. cherry picker (where appropriate)

Justification

In general, this task is expected to not be a daily occurrence. Evidence suggests tasks are typically 5 minutes in duration and occur once or twice a week. Whilst the impact of this hazard is high, the likelihood is reduced simply because the activity occurs infrequently.

Issue climbing equipment and train engineers to use is cost effective and training is an accepted control measure. Correct equipment is vital, and the company has an obligation to provide appropriate tools and equipment to allow staff to conduct their duties. Annual re-certification should be required in order to ensure engineers are familiar with correct procedure, and equipment should be regularly checked and maintained, with a log of this maintained. Given the frequency indicated for climbing – 5 minutes, once or twice a week, this would seem an appropriate control.

No lone working does not eliminate the risk as the climber could still fall, but would dramatically increase costs due to doubling staffing, potentially to the detriment of training or ability to resolve

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issues in an appropriate timescale. That said, for larger-scale jobs teams of engineers should be used as appropriate. New engineers could also be accompanied by an experienced engineer initially as part of training.

Use of powered access equipment is relevant for extreme heights or major works required. It would be cost prohibitive to use cherry pickers to access all poles, and access may not be possible in some locations. This option should be chosen as defined by circumstances.

Cease using telegraph poles is not practical as a blanket measure. Overhead line usage is reducing naturally due to newer underground cable installations, but a blanket ban would be extremely expensive and deprive customers of service. This should be considered as part of a modernisation programme as part of strategic risk review.

Ban climbing telegraph poles would allow the risk to be eliminated. However, this would mean the company could not provide a service when faults occur and is not practical as an overall measure. As with the other controls, it could be used with certain criteria – such as height of pole – that when reached require powered access to be used.

Activity: Working in pavement cabinets

Hazard: Electrocution from mains cables

Potential Control Measures

- Power cables clearly labelled and segregated from data cables
- No power cables in cabinets
- Use of insulated tools
- Appropriate training about working in cabinets

Recommended Control Measures

- Power cables clearly labelled and segregated from data cables
- Use of insulated tools
- Appropriate training about working in cabinets

Justification

In reality, most of the electrical cabling is expected to be low-voltage so the risk should be minimal. Due to this, clearly identifying the different cables to help engineers avoid them should generally be sufficient.

Power cables clearly labelled is a straight forwards control which can be achieved using coloured cables – standards already exist for mains cable – as well as physical labelling. Segregating power and data cables, either in separate conduiting or sections of the cabinet, will also help. This would not prevent accidental electrocution if a wrong cable is cut however.

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No power cables in cabinets would eliminate the risk. This would be extremely expensive as the cables already exist, likely for a reason. Re-wiring all cabinets, either by having separate power/data cabinets or relocating power cables, would be prohibitively expensive. The above control would achieve similar outcomes for significantly less cost.

Use of insulated tools is a common practice for electricians. Provided this does not require issuing two complete sets of tools to engineers, it would be a low cost control measure

Appropriate training should always be given to staff. Educating them of the risks, in combination with the above control for labelling and appropriate tools, would significantly mitigate the risks

Hazard: Hit by traffic

Potential Control Measures

- Cone off area
- Use of high-visibility clothing
- Introduce local speed limits
- Locate cabinets away from pavements/roads

Recommended Control Measures

- Cone off area
- Use of high-visibility clothing
- Introduce local speed limits

Justification

Being hit by traffic is a risk to any pedestrian, not just the engineers. However, as they are somewhat static “targets” this does allow for a range of preventative measures to be implemented that will control this risk.

Cone off the area would clearly indicate to passing drivers that work is being carried out, allowing them to steer round the hazard in advance. Cones are re-usable so can be reused at multiple sites, allowing for a cost-effective control

Use of high visibility clothing will help identify engineers to drivers, especially in low light or poor visibility. High-vis clothing could be part of the uniform to reduce additional costs, or due to its reusable and quasi-universal fit, can be used for different staff over a prolonged time period resulting in very low total cost of ownership. Combined with coning off the area, this reduces risks considerably.

Introduce local speed limits may not always be appropriate, and speed limits may already be in effect. For areas such as motorways this would be a sensible precaution however

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Location cabinets away from roads is not practical. Cabinets tend to be near houses, which are located on roads. Moreover, they already exist, so mass relocation when there is no viable alternative is not practical. For new projects perhaps planning guidance could be issued to allow for “bays” off roads to site cabinets in.

Activity: Working in customer homes

Hazard: Injury due to violent customers

Potential Control Measures

- No lone working
- Log of previous work, identifying “high risk” customers
- Training in customer service / difficult situations

Recommended Control Measures

- Log of previous work, identifying “high risk” customers
- Training in customer service / difficult situations

Justification

This type of hazard would initially not be predictable or preventable. The job requires customer interaction for the most part, and societal norms indicate this hazard will generally be low. A few simple control measures will minimise it.

No lone working does not eliminate the risk, or practically reduce it. It could simply increase the number of staff affected. The cost implication of doubling staff numbers for limited practical impact does not justify this measure. The only scenario when this would be effective is if difficult customers have been identified in advance, and lone working is a clear, known risk. However, in this situation, use of the police is probably the better course of action

Log of previous work will not help in the first instance but would help with repeat visits by identifying “problem” customers and forewarning staff when jobs are allocated. This could be combined with the above control of then not allowing lone working. There is no cost beyond time associated with this, although caution over data protection and inappropriate comments should be exercised. Logs should be reviewed by senior staff.

Training in customer service would help mitigate an escalating situation, and possibly prevent it. This would not remove the risk, but as part of a commitment to positive customer engagement it would have minimal extra costs as this form of training should be expected. De-escalating a situation may help, but specific training in this is expensive and engineers are likely not expected to act as security.

Hazard: Injury in customer homes due to physical environment

Potential Control Measures

- Appropriate PPE issued to engineers
- Advance planning of tasks

Recommended Control Measures

- Appropriate PPE issued to engineers
- Advance planning of tasks

Justification

Each home is different, although the tasks performed by the engineer are likely to be somewhat repetitive and building standards exist for a reason. This will enable engineers to plan accordingly to control this hazard.

Appropriate PPE issued will help in some situations – e.g. if the location is a building site. PPE would include helmets, goggles, overalls, high-vis and so forth. This is likely to be standard issue PPE so should not result in additional costs being incurred. For an average family home, this may be excessive but as each house is likely to be different engineers should be mindful of their surroundings and utilise the appropriate PPE that they are issued.

Advance planning of tasks will help to minimise risks through planning and preparation. The engineer should consider the environment they will need to work in, and plan and dynamically risk assess the task accordingly. For example, if drilling into a wall, checking for electrical cables with a cable detector tool.

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Final Risk Assessment

Role Assessed: Telecoms Engineer

Activities: As defined by job description

Hazard	Likelihood	Impact	Control Measures	Revised Likelihood	Revised Impact
Injury whilst driving due to inclement weather	Medium	High	<ul style="list-style-type: none">Review weather conditions in advance and plan work accordingly	Low	High
Falling from telegraph pole, whilst climbing or performing repair, due to adverse weather	Medium	High	<ul style="list-style-type: none">Review weather conditions in advance and plan work accordingly	Low	High
Illness due to exposure (heat / cold)	Low	Medium	<ul style="list-style-type: none">Issue appropriate clothingTraining in looking after self in cold / hot weather	Low	Medium
Falling from telegraph pole, whilst climbing or performing repair	Medium	High	<ul style="list-style-type: none">Issue climbing equipment and train engineers to useNo lone working (where appropriate)Use of powered access equipment, e.g. cherry picker (where appropriate)	Low	High
Electrocution from mains cables	Low	High	<ul style="list-style-type: none">Power cables clearly labelled and	Low	High

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			segregated from data cables <ul style="list-style-type: none"> • Use of insulated tools • Appropriate training about working in cabinets 		
Hit by traffic	Medium	High	<ul style="list-style-type: none"> • Cone off area • Use of high-visibility clothing • Introduce local speed limits 	Low	High
Injury due to violent customers	Low	Medium	<ul style="list-style-type: none"> • Log of previous work, identifying "high risk" customers • Training in customer service / difficult situations 	Low	Medium
Injury in customer homes due to physical environment	Low	Medium	<ul style="list-style-type: none"> • Appropriate PPE issued to engineers • Advance planning of tasks 	Low	Medium