

CVEN30008 Engineering Risk Analysis

Tutorial 3

Risk Rating using Risk Calculator

Select one risk item from risk register table to find the risk level (using PI chart) and complete the risk calculator when:

- No risk mitigation is implemented,
- Risk mitigation is implemented.

Find justification score based on the risk reduction and cost for correction.

(You need to assume a reasonable cost for correction).

Note: Estimate the likelihood and consequence of the risk where data is not provided in the risk register table.

CONSEQUENCES

The most likely outcome of a potential accident, including injuries, property damage and/or environmental damage.

Catastrophe

- Numerous fatalities
- Extensive financial loss (greater than \$5m)
- Major disruption to operations
- Extensive environmental damage

Disaster

- Multiple fatalities
- Significant financial loss (\$1m to \$5m)
- Major disruption to operations
- Major environmental damage

Very Serious

- Fatality
- Significant financial loss (\$500,000 to \$1m)
- Significant production disruption
- Significant environmental disruption

Serious

- Serious injury (permanent disability, amputation)
- Substantial financial loss (\$50,000 to \$500,000)
- Notable production disruption
- Serious environmental damage

Substantial

- Disabling injury requiring medical treatment
- Notable financial loss (\$5,000 to \$50,000)
- Slight production disruption
- Minor environmental damage

Minor

- First aid treatment – minor cuts, bruises, bumps
- Negligible financial loss (up to \$5,000)
- Negligible environmental damage

EXPOSURE

How often an individual interacts with a hazard.

- Very Rare** Not known to have occurred
- Rare** Occurs rarely, but has been known to occur
- Infrequent** Occurs between once per month and once per year
- Occasional** Occurs between once per week and once per month
- Frequent** Occurs approximately once per day
- Continuous** Occurs many times daily

PROBABILITY

The likelihood that the consequences will occur once the individual is exposed to the hazard.

Almost certain: The most likely and expected result if the hazard-event takes place

Quite possible: Quite possible, would not be unusual, even 50/50 chance

Unusual, but possible: Unusual but possible sequence or coincidence

Remotely possible: Remotely possible coincidence


Conceivable, but very unlikely: Has never happened after many years of exposure, but is conceivably possible

Practically impossible: Practically impossible, has never happened before

| | | Consequences | | | | |
|------------|----------------------|--------------|-----------|--------------|-----------|-------------------|
| | | 1 - Extreme | 2 - Major | 3 - Moderate | 4 - Minor | 5 - Insignificant |
| Likelihood | 1 - Very Likely | 1 | 1 | 1 | 2 | 3 |
| | 2 - Likely | 1 | 1 | 2 | 3 | 4 |
| | 3 - Possible (50/50) | 2 | 3 | 3 | 4 | 5 |
| | 4 - Unlikely | 4 | 4 | 4 | 5 | 5 |
| | 5 - Very Unlikely | 4 | 5 | 5 | 5 | 5 |

PI chart with descriptions

Risk register table

| | | | |
|---|-----------------------------------|------------------|--|
|  | SAFE WORK METHOD STATEMENT | | |
| | TASK: | TRENCHING | |
| | MWE Doc No: | 710-603 | |

| ITEM No. | JOB STEP (in sequence) | HAZARD(S) | RISK RANKING (No control measures) | | | CONTROL MEASURE(S) | RISK RANKING (with control measures) | | |
|----------|--|---|------------------------------------|---|-------|--|--------------------------------------|---|-------|
| | | | L | C | Level | | L | C | Level |
| 2 | Parking Vehicle (carparks, side of road, local roads, etc) | <ul style="list-style-type: none"> Traffic accident / incident Obstructing driveways Unauthorised parking Vehicle damaged / vandalised Obstruction to public | 3 | 2 | 3 | <ul style="list-style-type: none"> Only park in designated areas on-site or in public car-parks Obey street signage at all times Parking fines are at the responsibility of the driver Do not obstruct any driveways, access ways or emergency access gates / areas. Lock and secure vehicle at all times, if vehicle is to be left unattended If required to park on road edge, park on level ground, give maximum clearance to road where possible, minimize vehicles parking on edge. | 4 | 2 | 4 |
| 3 | Briefings | <ul style="list-style-type: none"> Employees not briefed daily regarding works carried out Employees entering rail corridor without protection officer or briefing No permits | 2 | 3 | 2 | <ul style="list-style-type: none"> Ensure all staff receive the Supervisors Pre Work Briefing daily and are signed on. Ensure that all staff entering the rail corridor have been briefed by a Protection Officer and signed on Ensure that all persons have relevant Certificate of Competency carried on them whilst working Ensure that relevant permits are obtained prior to entering corridor and conducting any works | | | |

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|----------|-------------------------------|---|------------------------------------|---|-------|--|--------------------------------------|---|-------|
| | | | L | C | Level | | L | C | Level |
| 6 | Manual Handling | <ul style="list-style-type: none"> Injury to personnel from incorrect manual handling techniques | 2 | 3 | 2 | <ul style="list-style-type: none"> Utilise mechanical lifting devices (crane, backhoe, forklift, etc) where possible to minimise the need for manual work Ensure all personnel understand the John Holland HELP poster to assist in preventing manual handling injuries as attached to this SWM. Use at least two people to lift / move heavy or awkward loads when mechanical means are not available, if the load is too heavy or awkward do not move until mechanical means are available to assist Consider purchasing items of less weight 1. Store heavier items at lower points to enable correct manual handling techniques and or aids | | | |
| 7 | Work in Rail Corridor | <ul style="list-style-type: none"> Struck by Train/vehicle plant Serious injury or Fatality | 2 | 2 | 1 | <ul style="list-style-type: none"> Inform train control of whereabouts; Rail Protection Plan if appropriate; Wear high visibility clothing – orange; Use a lookout when within 3m of track; Safeworking Protection Co-ordinator (when required) | 3 | 2 | 3 |
| 8 | Exit vehicle and inspect site | <ul style="list-style-type: none"> Incorrect area marked out Impact with rolling stock Death Serious injury | 2 | 2 | 1 | <ul style="list-style-type: none"> Ensure correct drawing and marking Complete Rail Protection Plan and implement by Track Force Protection Co-ordinator | 3 | 2 | 3 |

