

ROLES & RESPONSIBILITIES OF **OVERHEAD LINE DESIGNERS**

1

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INTRODUCTION

- Fundamental principles & objectives
- Framed through Electricity Safety Regulations
- Focuses on line designers' risks
- Development of common expectations
- Mechanisms for reporting and managing concerns

2

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2

WHO ARE OVERHEAD LINE DESIGNERS?

- Employees
- Members of Engineering New Zealand (ENZ)
- Other Engineering Bodies (REA, IET, IEEE, IEAust)
- Registered/Licensed Electrical Worker (EWRB)
- Assuming not PCBU (you need to check)

3

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WHAT DO LINE DESIGNERS DO?

- Design Works
- Undertake **Regulated** Electrical Work
- Under the Electricity (Safety) Regulations 2010
- To summarise Regulation 14:

Overhead line designers must ensure that their designs if constructed would be **electrically safe**.

} DUTY

4

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4

ELECTRICAL WORKERS (EWRB) IN COMPARISON

- Construct / Maintain Works
- Prescribed Electrical Work (PEW): Schedule 1 ESR
- Must be Registered / Licensed (EWRB)
- They also do Regulated Electrical Work (i.e. not PEW)
- Summarising Regulation 13:

Those **constructing or working** on an overhead line must ensure that it is **electrically safe**.



5

5

ROLE DIFFERENCES

Overhead Line Designers	Electrical Workers ^{FL SEP} (Registered / Licensed)
Design Works	Construct / Maintain Works
Regulated Electrical Work (Not PEW)	Prescribed Electrical Work (Schedule 1 ESR)
Must ensure that their designs if constructed would be electrically safe .	Those constructing or working on an overhead line must ensure that it is electrically safe .

6

DESIGN OF WORKS

REGULATION 14

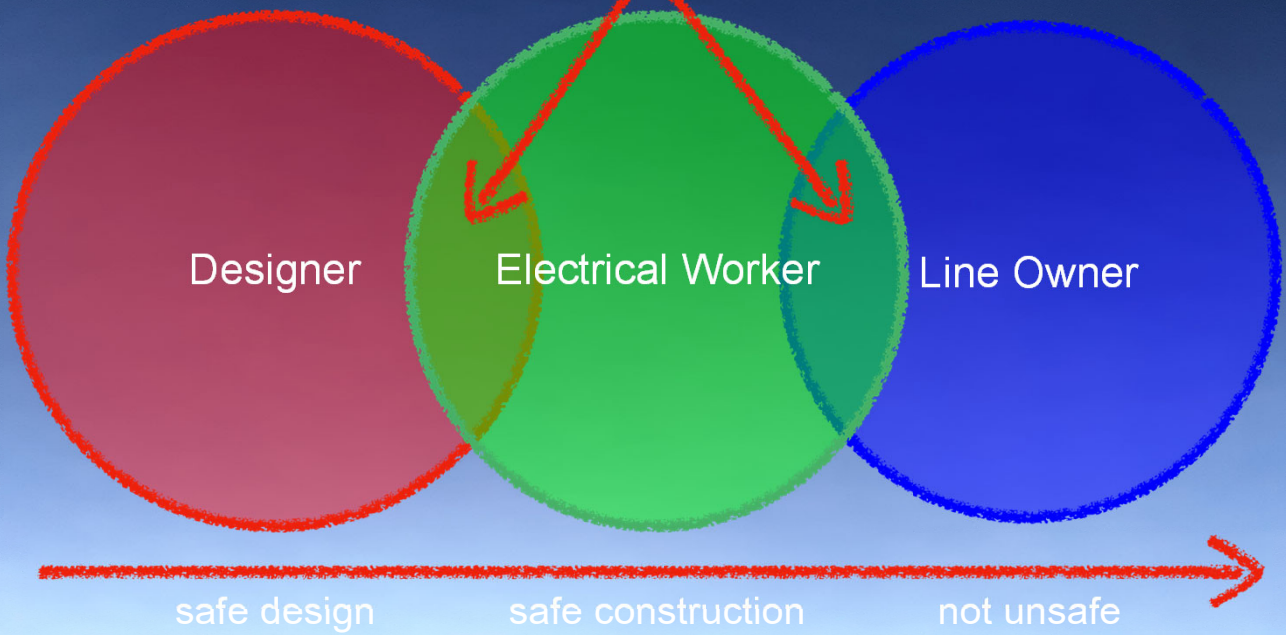
Even unconstructed designs or guidance can get you in trouble!

- Designs have the potential to be constructed in the future.
- Includes supervision of designs.
- Emails, directions, guidance etc.
- Strict Liability Offence - Level 2 Penalty.

Overhead line designers must ensure that their designs, if **constructed** would be **electrically safe**.



Duties to Minimise Risks HSWA (Section 30) \propto "Influence"



ELECTRICALLY SAFE / UNSAFE

Overhead Lines must be designed so that they are **electrically safe** and must be maintained so that they are unlikely to become **electrically unsafe**

An overhead line is said to be **electrically safe** if there is not a **significant risk** that a person or property will be injured or damaged by its operation.

An overhead line is said to be **electrically unsafe** if there is a **significant risk** that a person may suffer serious harm, or that property may suffer significant damage.

Interpretation

Regulation 20 gives examples of what is deemed **unsafe**

9

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not safe ≠ unsafe

10

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11

compliant \neq safe
non-compliant \neq unsafe

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12

LINE DESIGNER

RESPONSIBILITIES

- Consider how the line will **constructed**.
- How it will be **operated**.
- How it will be **maintained**.
- Act and report on their concerns regarding:
 - Design, construction, maintenance, use, changed circumstances
 - Individual component issues/failures/'recalls' etc.

13

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ELECTRICAL WORKERS (EWRB)

REPORTING DUTIES

Regulating 19 - Notifying WorkSafe of danger

- Only applies to a person while engaged in Prescribed Electrical Work
- Hazard presents an **immediate danger to life or property**

14

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LINE OWNERS **MUST** INSPECT INTERVAL < 5 YEARS



- Maintain clearances, assess risks etc.
- NZ ECP 34 requires that interval does not exceeding five years
- Line not compromised by changed circumstances.
- Engineering calculations, dispensations need to be kept and updated if required

15

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WHAT'S MISSING?

- A duty for reporting and notifying concerns.
- A framework for considering concerns.
- A standard process for reporting, acting and resolving concerns.

It is noted that internal reporting processes vary considerably between organisations.

16

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HANDLING CONCERNS, ISSUES AND OFFENCES

- A common framework is needed
- Common: vocabulary and interpretations
- We need to set boundaries
- What is and isn't acceptable?
- We need the threat of escalation to add impetus.

The Engineering New Zealand's Code of Ethical Conduct provides good guidance and a good framework.

17

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CODE OF ETHICAL CONDUCT ENGINEERING NEW ZEALAND

1. Protect people's health and safety
2. Consider the environment
3. Report adverse consequences
4. Act competently
5. Behave appropriately
6. Warn about ignoring advice
7. Maintain confidentiality
8. Report significant breaches [of Code]

18

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ADVERSE CONSEQUENCES

DEFINITION ENZ

Adverse consequences means:

- significant harm, or an **unacceptable likelihood of significant harm**, to the health or safety of people.
- significant damage, or an **unacceptable likelihood of significant damage**, to the environment.

19

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19

WHAT TO DO IF YOU HAVE A CONCERN

- Describe and document situation
- Summarise facts
- Satisfy yourself that reasonable action is being taken
- If not report (directly or indirectly)
- Be aware of updated Protected Disclosures Act (July 2021)

20

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DISCUSSION

21

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EXTRA SLIDES

22

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22

DESCRIBING A PRACTICE

- Best Practice
- Good Electricity Industry Practice (GEIP)
- Reasonable Practice
- Standard Industry Practice
- Negligent Practice (failing to act, malpractice etc.)

23

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23

ELECTRICAL WORKERS (EWRB) UNDERTAKING PRESCRIBED ELECTRICAL WORK

- Are subject to disciplinary action by the Board
- Penalties / Costs
- Suspension or disqualification
- Publication of name
- Censure

24

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PCBU

The Act introduces a new term, “Person Conducting a Business or Undertaking” (PCBU), which captures employers, self-employed, principals to contracts, manufacturers, designers, etc. who have the primary health and safety duties. Workers also have duties under the Act. Workers include employees and contractors.

<http://www.ohsconsultation.co.nz/our-services.html>

WORKER DUTIES

Workers must take reasonable care of their own health and safety and reasonable care that others are not harmed by something they do or don't do. They must also follow any reasonable instructions given to them by the PCBU, and cooperate with any reasonable health and safety policy or procedure.

<https://www.employment.govt.nz/workplace-policies/health-and-safety-at-work/>

IMMEDIATE DANGER

“Immediate danger isn’t defined in the regulations, but can be considered to be when the agent of harm is already present, such as escaping gas or an appliance spilling products of combustion. A non-compliant installation is not necessarily unsafe, let alone immediately dangerous”

<https://www.worksafe.govt.nz/about-us/news-and-media/notifying-situations-of-immediate-danger/>

27

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27

HEALTH AND SAFETY DUTIES

HSWA 2015

30 Management of risks

(1) A duty imposed on a person by or under this Act requires the person—

(a) to eliminate risks to health and safety, so far as is reasonably practicable; and

(b) if it is not reasonably practicable to eliminate risks to health and safety, to minimise those risks so far as is reasonably practicable.

(2) A person must comply with subsection (1) to the extent to which the person has, or would reasonably be expected to have, the ability to influence and control the matter to which the risks relate.

28

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28

PROTECTED DISCLOSURE ACT

WHO? WHAT? TO WHOM?

- The Protected Disclosure “Whistleblowers” Act 2000
- Update: Protected Disclosures (Protection of Whistleblowers) Act - July 2021
- Serious Wrongdoing
- To the head or a deputy head of the organisation
- Appropriate authority:
- Acknowledge > Consider > Check > Deal_With

29

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SERIOUS WRONGDOING

INCLUDES

- An offence
- A serious risk to public health, public safety or the environment
- Behaviour of those performing a statutory function or statutory duty or exercising a statutory power

30

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30