

CIGRE Study Committee B2

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP

WG B2.88	Name of Convenor: John McCormack (Australia) E-mail address: mccormack.john@electranet.com.au	
Strategic Directions #²: 3, 4		Sustainable Development Goal #³: 9
The WG applies to distribution networks: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No		
Potential Benefit of WG work #⁴: 1,2,6		
Title of the Group: Guidelines for Safety of Overhead Line Construction, Maintenance & Operations		
Scope, deliverables and proposed time schedule of the WG: Background: <p>Safety will continue to be a key focus for construction and maintenance of OHL. This has arisen due to the increasing expectation of ensuring a safe work environment is provided for workers; driven by both economic benefits, legislative compliance, and community values.</p> <p>Design of new transmission line assets are typically required to account for safe work methods that may be adopted over asset whole-of-life (construction, maintenance and even demolition). On the other hand, existing assets may lack the same measures and require modification to make-safe prior to undertaking routine or corrective maintenance.</p> <p>Some examples of safety issues that can be encountered are:</p> <ol style="list-style-type: none"> 1. Hazard associated with new technologies/work methods for construction/maintenance (e.g., helicopter methods, drones) 2. Installation and commissioning new lines parallel to existing energised lines (electric shock due to induction or close proximity to live parts) 3. Unstable soil conditions that may lead to collapse of excavations or de-stabilise machines (cranes, elevated work platform vehicles) 4. Climbing constraints on older assets not compliant with current personnel access/fall-arrest loading criteria 5. Working at heights 6. Design structures for safety (to eliminate or control hazards). <p>Purpose/Objective/Benefit of this work:</p> <p>The objective is not to develop design/construction engineer or work supervisor into safety specialists, but rather ensure these front-line persons have the awareness, tools and understanding to ensure risks are minimised.</p> <p>Excluded from the scope is safe management of live work on energised lines. This WG will collaborate with a parallel proposed WG “Live line working: Safe Management Guidelines” current WG B1.71 Guidelines for safety risk management in cable systems).</p> <p>Scope:</p> <p>The scope of the work shall include:</p> <ul style="list-style-type: none"> - Review social/industry acceptable levels of risk of injury in the construction industry. - Identify types/frequency of occurrence of incidents related to OHL work and contributing factors. 		

- Define meaning of hazard and risk.
- Ensuring that baseline risk assessment is developed in relation to the specific scope of work; Identify hazards that expose line workers to harm during construction, commissioning, inspection & maintenance.
- Evaluate processes to manage hazards, application of the hierarchy of control (elimination, substitution, personal protective equipment, administration).
- Evaluate safety-in-design endeavours to identify and eliminate/substitute hazards to improve safety. Engaging safety practitioners during the design change for their inputs.
- Evaluate a selected range of safety manuals/training & site safety management practice including effectiveness of engagement with line workers.
- Review safety culture within the industry at both organisational and tool-box level for compliance with documented work methods, company, legal and statutory compliance.
- Recommend processes for introduction of new technology to identify & manage hazard, and risk assessment in the workplace.
- Post Review session for the identification of areas from improvement.

The work will be undertaken in two stages (i.e., two reports):

- Part 1: Identification of Construction/maintenance work hazards/risks
- Part 2: Evaluation of current safety control management practices & recommended guidelines for improved practice

Excluded from Scope:

- 3rd party infrastructure and public exposure to electrical hazards under normal operating and fault conditions
- 3rd party infrastructure and public exposure to construction hazards
- Ensuring that procurement documents include all the relevant health and safety requirements
- Review commissioning and routine operational maintenance procedures.

Remarks:

Previous and related activities are as follows:

- TB 734 - Managing Risk in Substations
- TB 694 Ground Potential Rise at Overhead AC Transmission Line Structures during Power Frequency Faults (WG B2.56)
- TB801 Guidelines for safe work on cable systems under induced voltages or currents (WGB1.44)
- TB 805 Safe Work Methods in Substations (WG B3.46)
- WG B1.71 Guidelines for safety risk management in cable systems
- WGB2.87 Live line working: Safe Management Guidelines (
- TB 471 Working safely while supported on aged overhead conductors
- B2 202 2004 Working Safely on Aged Conductor
- IEC 128, ISO 45001 & other I/N standards

Deliverables:

- Annual Progress and Activity Report to Study Committee
- Technical Brochure and Executive Summary in Electra
- Electra Report
- Future Connections
- CIGRE Science & Engineering (CSE) Journal
- Tutorial
- Webinar

Time Schedule:

- | | |
|---|---------|
| • Recruit members (National Committees) | Q1 2023 |
| • Develop final work plan | Q2 2023 |
| • Draft TB for Study Committee Review | Q2 2025 |
| • Final TB | Q4 2025 |
| • Tutorial | Q2 2026 |
| • Webinar | Q2 2026 |

Approval by Technical Council Chairman:

Date: January 5th, 2023



Notes:

¹ Working Group (WG) or Joint WG (JWG),

² See attached Table 1,

³ See attached Table 2 and CIGRE reference Paper: Sustainability – at the heart of CIGRE's work.

⁴ See attached Table 3

WG Membership: refer Comments at end of document

Table 1: Strategic directions of the Technical Council

1	The electrical power system of the future reinforcing the End-to-End nature of CIGRE: respond to speed of changes in the industry by preparing and disseminating state-of-the-art technological advances
2	Making the best use of the existing systems
3	Focus on the environment and sustainability (in case the WG shows a direct contribution to at least one SDG)
4	Preparation of material readable for non-technical audience

Table 2: Environmental requirements and sustainable development goals

	CIGRE selected the 7 SDGs that are the most relevant to CIGRE. In case the WG work refers to other SDGs or do not address any specific SDG, it will be quoted 0.
0	Other SDGs or not applied
7	SDG 7: Affordable and clean energy Increase share of renewable energy; e.g. expand infrastructure for supplying sustainable energy services; ensure universal access to affordable, reliable, and modern energy services; energy efficiency; facilitate access to clean energy research and technology
9	SDG 9: Industry, innovation and infrastructure Facilitate sustainable infrastructure development; facilitate technological and technical support
11	SDG 11: Sustainable cities and communities Increase attention on sustainable and resilient buildings utilizing local (raw) materials, power for electric vehicles, strengthening long-line transmission and distribution systems to import necessary power to cities, developing micro-grids to reinforce the sustainable nature of cities; protect and safeguard the world's cultural and natural heritage; reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and waste management
12	SDG 12: Responsible consumption and production E.g. Promote public procurement practices that are sustainable; address reducing use of SF6 and promote alternatives, encourage companies to adopt sustainable practices and to integrate sustainability information into their reporting cycle, address inefficient fossil-fuel subsidies that encourage wasteful consumption
13	SDG 13: Climate action E.g. Increase share of renewable or other CO ₂ -free energy; energy efficiency; expand infrastructure for supplying sustainable energy; strengthen resilience and adaptive capacity to climate-related hazards and natural disasters; integrate climate change measures into national policies, strategies and planning; improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
14	SDG 14: Life below water E.g. Effects of offshore windfarms; effects of submarine cables on sea-life
15	SDG 15: Life on land E.g. Attention for vegetation management; bird collisions; integration of substations and lines into the landscape

Table 3: Potential benefit of work

1	Commercial, business, social and economic benefits for industry or the community can be identified as a direct result of this work
2	Existing or future high interest in the work from a wide range of stakeholders
3	Work is likely to contribute to new or revised industry standards or with other long term interest for the Electric Power Industry
4	State-of-the-art or innovative solutions or new technical directions
5	Guide or survey related to existing techniques; or an update on past work or previous Technical Brochures
6	Work likely to contribute to improved safety.

Comments:

1) CIGRE Official Study Committee Rules: WG Membership

<https://www.cigre.org/GB/about/official-documents>

- a. Only one member per country (by exception of SC Chair)
- b. WG nominees must first be supported by their National Committee (or local SC Member) as an appropriate representative of their country.
- c. Acceptance of the nomination is granted by the SC Chair and advised to the WG Convener

2) Collaboration Space

<https://www.cigre.org/article/GB/collaborative-tools-2>

CIGRE will provision the WG with a dedicated Knowledge Management System Space.

The WG will use the KMS for drafting collaboration, capture and retention of discussion and meeting records.

Official country WG Members will be sent registration instructions by the Convener.

Official country WG Members may request the WG Convener to allow additional access for an extra national subject matter specialist to aid in the work at the national level, including NGN members.