

CIGRE Study Committee A2

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP

WG N° A2.69	Name of Convenor : Claude RAJOTTE (CA) E-mail address: rajotte.claude@hydroquebec.com	
Strategic Directions #2: 2 and 3	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 : 4		
Title of the Group: Guide for Transformer Maintenance Update		
Scope, deliverables and proposed time schedule of the Group		
Context		
<p>WGA2.34 was created in November 2006 and published Technical Brochure #445 “Guide for Transformer Maintenance” in February 2011. It has been the most downloaded Technical Brochure over the last 4 years and still is in 2021 which testifies of its importance and relevance.</p> <p>Considering the sustained interest of the CIGRE community for this topic and the evolution of the maintenance practices, materials, design and manufacturing, an update of the brochure is required in order to assure that CIGRE delivers the most complete and up-to-date information to its members.</p> <p>Moreover, SC A2 is just starting work on its next Green Book on Transformer Life Management in which a chapter on maintenance is needed. The revision of TB445 will also provide the required material for that purpose.</p>		
Scope and aim		
<p>The current version of the brochure contents 6 chapters. The following table give an overview on the required updates:</p>		
Chapter	Content	Item to update
Introduction	Overview, maintenance cycle description, standards and CIGRE references	Minor update
Maintenance strategy	Importance of maintenance, survey on maintenance practices, discussion on different maintenance modes (time based, condition based, corrective, on-line monitoring),	Survey on maintenance practice Improve the section by taking in account recents developments regarding on-line monitoring
Maintenance process	Planning, organization and competence management, execution and safety,	Minor update

	recording and optimization of maintenance	
Component selection and maintenance	Transformer components, options, selection, initial costs, maintenance level, maintainability, technical constraints, reliability, potential failure modes, and life expectancy.	Update to include new technologies, improve the advantages/disadvantages tables for each component, addition of representative pictures, etc.
Maintenance catalogue	Electrical measurements, dissolved gas analysis, oil and paper tests, on-load Tap changer Tests, visual inspections, drying, oil treatments, precautions, etc.	Update to include new testing technologies, new knowledge about oil and paper aging, treatments, etc.; refer to related CIGRE brochures recently published
Major work- repair	Testing after repair, on-site repair, on-site testing, economics and environmental considerations	Update to include recent experiences, including reference to related CIGRE brochures recently published

In addition to the update of brochure #445, the WG will work closely with the Green Book team to select pertinent information to be included in the chapters associated with transformer maintenance.

Deliverables:

- Technical Brochure and Executive Summary in Electra
- Electra Report
- Future Connections
- CSE
- Tutorial
- Webinar

Time Schedule: start: Fall 2022

Final Report: Fall 2024

Approval by Technical Committee Chairman :

Date : October 3rd 2022



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

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.